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MONITORING PROGRESS AND SPECIAL FOCUS ON ACCESSIBILITY

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OECD Territorial Reviews: Morelos, Mexico

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Foreword

The *OECD Territorial Review Series* examines a range of policy issues to unleash the growth potential of regions and improve the quality of life for their residents. Issues covered include governance, innovation, urban development and rural development, among others. Each review analyses how countries, regions or a groups of regions cope with these challenges, using a territorial lens, and offers policy recommendations to address them.

The present review is a follow-up study to the 2017 OECD *Territorial Review of Morelos, Mexico*. It aims to monitor progress in implementing the 12 recommendations and 39 sub-recommendations identified in that report. The degree of progress in implementing the recommendations is quantified according to reforms undertaken by the regional authorities. The review also identifies the main bottlenecks and way forward for each sub-recommendation.

During the implementation period, the State of Morelos suffered the effects of the deadliest earthquake in Mexico over the past 32 years. The review examines the response and reconstruction process led by the state. Finally it places a special focus on improving accessibility and connectivity by examining a number of initiatives and transportation projects.

Despite the short period for implementation, the State of Morelos recorded progress in all areas, confirming its advancement in the reform agenda identified in the 2017 review.

This review was carried out as part of the Programme of Work of the OECD Regional Development Policy Committee (RDPC). The RDPC provides a unique forum for international exchange and debate on regional economies, policies and governance. The RDPC has developed a number of activities, including Territorial Reviews. This report was approved by the RDPC on 5 July 2018 (CFE/RDPC(2018)9).

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In the OECD Secretariat, the report was co-ordinated by Elodie Isabel de Oliveira and Lorena Mello e Figueiredo, under the supervision of Jose Enrique Garcilazo, Head of the Regional and Rural Policy Unit in the Regional Development and Tourism Division led by Alain Dupeyras, Head of Division. The review was drafted by Lorena Mello e Figueiredo and Guillaume Lecaros de Cossio. Stephen Perkins of the International Transport Forum also drafted parts of the report (Chapter 4). The review benefited from comments and input from Manuel Gerardo Flores of the OECD Mexico Centre for Latin America, Elodie Isabel de Oliveira, Tadashi Matsumoto, Oscar Huerta Melchor and Andrés Sanabria in CFE. Thanks are also due to Eléonore Morena for formatting the manuscript and Pilar Philip for preparing the report for publication.

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Executive summary

This review builds upon the OECD Territorial Review of the State of Morelos, Mexico, carried out in 2016 and published in 2017. The 2017 review made 12 recommendations and 39 sub-recommendations across the policy sectors of human capital development, integrated territorial development, governance and finance. The recommendations seek to help Morelos improve its economic performance and the well-being of its citizens. The state's indicators of education, informal employment, safety and environmental protection lie below national standards, according to the 2015 OECD report *Measuring Well-being in Mexican States*.

This monitoring review assesses the main regional policy changes since 2016 and the extent to which the recommendations put forward in the 2017 review have been implemented. It also places a special focus on the impacts of the earthquake of 19 September 2017 and on the reconstruction strategy led by the State of Morelos. The report further analyses recent railway and road projects through the lens of accessibility and connectivity.

There was progress in all of the 12 recommendations proposed in the 2017 report, with significant progress in 8% of sub-recommendations, progress in 43% of them and modest progress in the remaining 49%

Since 2017, Morelos has kept pace with existing trends: increased specialisation in the manufacturing sectors but with little gains in labour productivity; persistently high share of informality; and low skills levels. GDP per capita and population are growing, but the population is growing faster than the GDP per capita. Connectivity challenges hamper the potential to benefit from the state's advantageous geographic location near the capital. Perception of security, an essential element of well-being and instrumental for regional attractiveness, remains low at 13% in 2017. Employment also remains precarious, in the face of the stubbornly high level of informality at 68% as of 2017. Rural areas tend to be significantly more affected by lower well-being outcomes, reduced economic opportunities and persistent informality.

Morelos has advanced in all recommendations proposed in the 2017 review to varying degrees. Progress was made in 43% of the sub-recommendations (17 out of 39), meaning that significant changes could be observed. The restructuring of the Human Capital Council is noteworthy, and so are the continuous efforts to strengthen the innovation system in Morelos. Modest progress was recorded in 49% of them (19 out of 39), in which solid efforts are needed to support implementation. Finance and taxation are challenging areas in which stronger advances are yet to be recorded. For the remaining 3 sub-recommendations (8%), Morelos made very substantial progress, meaning that the bulk of actions should be focused on maintaining current efforts, without the need for changes in direction. The state's commission for evaluation and monitoring (COEVAL) has solidified its actions, and tourism policies have been better defined and become more strategic.

Considering the timeframe of each sub-recommendation, 15% are to be implemented over the short term (0 to 1 year), 51% over the medium term (1 to 3 years) and 33% over the long term (more than 3 years). In each of these groups, Morelos had made modest progress in 45% to 66%

of them. The most significant advances are found in the group of medium-term recommendations, notably regarding skills development, tourism and rural policy. Full implementation is still to be promoted. Long-term changes, such as building trust in the public administration, consolidating metropolitan spatial planning and enhancing the state's internal connectivity, have shown understandably less rapid change.

The earthquake of 19 September 2017 has caused human losses, damaged public infrastructure and slowed down progress in some policy sectors

On 19 September 2017, the Central Mexico earthquake hit Morelos, Puebla and the Greater Mexico City area, with a magnitude of 7.1. It was the deadliest of the past 32 years in Mexico. Morelos reported 74 casualties and 1 945 injured people; 7 410 homes with total damage and 16 386 with partial damage; damage to hydraulic infrastructure and public buildings; and 22 damaged stretches of road and streets, as well as 3 fractured bridges.

The recovery and reconstruction efforts diverted significant state financial and human resources from the implementation of the recommendations set in the Territorial Review of 2017. The state created a single agency to co-ordinate the response (*Unidos por Morelos)* and dedicated personnel to deliver this response in each of the municipalities affected. This favoured a unified and coherent strategy, as well as communication with other stakeholders, including the national government. The agency leads the housing reconstruction strategy and the delivery of construction materials for partially-damaged structures. The state is updating urban plans in Jojutla and Cuernavaca, focussing on much needed issues of sustainability and mobility. In all, Morelos has delivered quick, well-organised and well-structured policy responses to the earthquake.

The road and railway projects have positive prospects but strategic planning and evidence-based policy making can be further advanced

Improved connectivity and logistics can reduce transport costs for businesses, expand the market for local producers and achieve better integration with production and consumption centres. Important investments were made in road connectivity, namely in the north-south federal highway *Autopista del Sol*, and the east-west road connections with Puebla and regional airports. In the freight rail sector, the state is rehabilitating a 103 km link from the industrial park of Cuautla towards the north, near the Mexico City conurbation. The rail line will contribute to the development of a more diversified economic pole in Cuautla. By shifting freight from road to rail, another benefit will be greater road safety and less air pollution.

Given that resources are limited, planning and prioritisation are essential to best address the state's infrastructure needs and build consensus around investments. Morelos needs to implement more consistently cost-benefit and impact assessments to identify promising projects and measure risks. To strengthen evidence-based decision-making, the state should make use of already existing data on traffic and modelling of freight flows, and benefit from the expertise of national regulators. Strategic plans and public policy statements should be deployed more often to bring attention to state objectives and communicate about decisions.

Assessment and recommendations

The context of the Review

The Review is follow-up study to the OECD Territorial Review (TR) of Morelos, Mexico carried out in 2016 and approved by the OECD Regional Development Policy Committee on 7 November 2016 (OECD, 2017[1]). The TR identified 12 main recommendations and 39 sub-recommendations to the State of Morelos to improve the economic performance of the Region and well-being of its citizens.

The objectives of this follow-up *Review* are to assess the main regional policy changes since 2016 and the extent to which the recommendations from the TR have been implemented. This evaluation takes into account that the recommendations have different timeframes (short-, medium- and long-term). It also pays attention to the impacts of the earthquake which occurred in September 2017, during this implementation period. It provides new recommendations on logistics and accessibility to ensure that the State of Morelos takes full advantage of its favourable geographic location and supports the implementation of the recommendations to the Council for Human Capital.

Morelos has kept pace with previous trends

Since the launch of the TR, Morelos has kept pace with the existing trends. GDP per capita has maintained its growth trajectory, of USD 11 471 in 2015. It is based on a quite diversified economy, sustained mostly by the manufacturing sector (notably automotive and chemicals), a considerably large agricultural and service sectors (namely tourism) and 43 research centres. Tapping into this diversified economy with a strong research component, the state has the potential to become an innovation hub. The growth potential is backed up by the state's central geographic location, in close proximity to Mexico City, and its youth premium, adding up to the workforce. Moreover, Morelos is rich in natural and cultural amenities and has favourable climate conditions, which are critical drivers for tourism.

Despite these positive aspects, Morelos still faces significant challenges to fully unleash its development potential. Productivity per capita remains relatively low for both OECD and Mexican standards, due to low levels of education in the workforce and the fragmented, inward-oriented character of its innovation ecosystem. Employment also remains precarious, in the face of the stubbornly high level of informality at 68% as of 2017. Accessibility and connectivity hamper Morelos' potential to benefit from its natural geographic advantage. Perception of security, an essential element of well-being and instrumental for regional attractiveness, remains as low as 13% in 2017. This is so despite the state having reported lower rates of violent crime, in comparison to 2013. Rural areas tend to be significantly more affected by lower well-being outcomes, scarce economic opportunities and persistent informality. Finally, a new challenge has emerged with the reconstruction process in the aftermath of the earthquake of 19 September 2017.

Measuring progress in the recommendations

The 12 recommendations identified in the TR of Morelos are aimed at addressing these challenges, across different policy sectors, through an integrated strategy (table below):

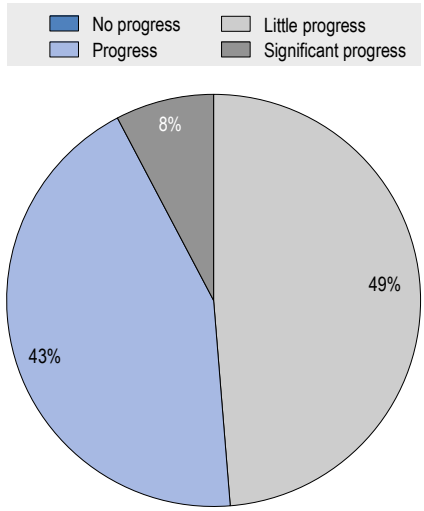
Main recommendations

1	Improve the quality of basic **education**, especially in peri-urban areas and lagging rural communities, and increase participation in upper secondary and tertiary education
2	Ensure **training** programmes are more responsive to the needs of the economy and target the informal sector too
3	Improve **knowledge** creation, diffusion and exploitation
4	Strengthen the role of the **Council for Human Capital** to promote the upskilling of the labour force and an integrated vision
5	**Spatial planning** requires a better implementation strategy
6	**Urban policies** should design and implement policies **at the metropolitan scale**
7	**Rural policy** must go beyond agriculture and develop further synergies with the tourism sector
8	**Accessibility** of the region should strengthen both a. connections to external markets in neighbouring states and export and b. internal connectivity
9	Preserving the **environment** by co-ordinating and implementing policies to mitigate climate change
10	Foster **co-ordination** of the state administration with municipalities, and with neighbouring states
11	Improve **governance** mechanisms and the **business climate**
12	Morelos should improve the management of its own **funds**, including transfers to municipalities

The Review measures progress in each of the recommendations and sub-recommendations, according to four levels: 0, when no significant progress is made; 1, when limited progress is made and further implementation is needed; 2, referring to progress; and 3, which refers to significant progress. Even when significant progress is reached, the state has to deploy continued efforts to maintain the current situation. It takes into account the short timeframe since the publication of the TR. Small changes in the short-term can go in the right direction to build the foundation for long-term change, and in this sense are noted in the Review. It has to be highlighted that demanding efforts of reconstruction and recovery were required in the aftermath of the earthquake.

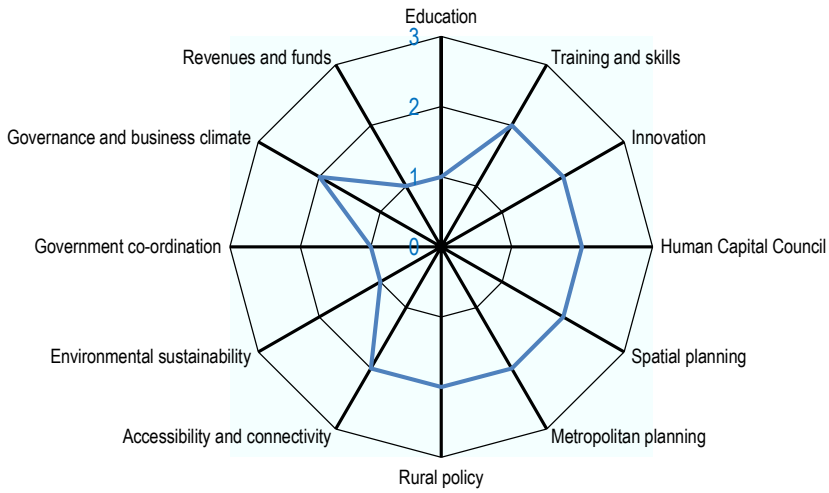
Overall, the State of Morelos has made progress in 43% of the sub-recommendations (17 out of 39), and modest progress in 49% of them (19 out of 39), whereby solid efforts to support implementation are further needed. For 3 sub-recommendations, Morelos made significant progress, meaning that actions are needed to maintain the current efforts, but no indications are provided in a different direction. See below.

Figure 0.1. Progress on sub-recommendations



When grouping by the 12 recommendations, 8 of them show progress (scale 2) and 4 of them have an average scale of 1, which indicates little progress, as the figure below indicates.

Figure 0.2. Progress on recommendations

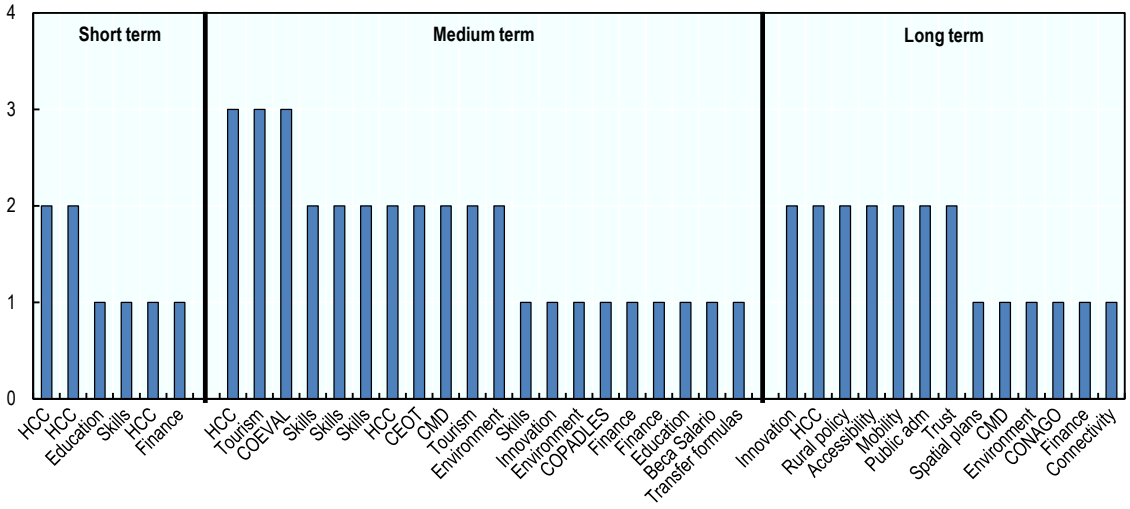


Considering the timeframe of each sub-recommendation, 15% are to be implemented over the short run (0 to 1 year), 51% over the medium term (1 to 3 years) and 33% over the long term (more than 3 years).

- Amongst the 6 recommendations to be implemented in the **short term**, Morelos has made *progress* in 33% (2 out of 6) of them and *modest progress* in the 66% (4 out of 6).
- Amongst the 20 recommendations over the **medium term**: Morelos has made *significant progress* in implementing 15% of them, *progress* in 40%, and *modest progress* in 45% of them.

- Amongst the 13 recommendations over the **long term**, Morelos made *progress* in 54% of them, and *modest progress* in the remaining 46%.

Figure 0.3. Progress by timeframe



The sections below address progress in the recommendations and sub-recommendations. It also assesses the impacts of the earthquake of 19 September 2017 and dedicates a special focus on connectivity and accessibility, including new recommendations.

Improving the quality of education

The region has put emphasis on improving the quality of overall education in schools and investing in human capital. The first recommendation refers to **improving the quality of basic education and increasing participation in upper secondary and tertiary education.** Recommendations 2 and 4 refer to human capital under the dimension of skills training and upskilling of the labour force.

1. Progress reported on sub-recommendations

	Progress	Timeframe
1. Centralise data collection about schools and student performance.	Modest progress	Short-term
2. Introduce early measures to identify and support low performing students and mobilise specialised staff for remedial support in lagging rural areas.	Modest progress	Medium-term
3. Revise the schemes of financial student support guaranteeing that it is targeted at those who need it the most.	Modest progress	Medium-term

Given the short amount of time since the 2017 Territorial Review, limited progress could be observed on the specific measures indicated in the three sub-recommendations. A positive step was to request state funding (via the *fideicomiso)* to a software development project, to centralise data collection in schools (sub-recommendation 1). There are specialised programmes to support schools in lagging rural areas, but specific measures to identify low-performing students remain to be developed (sub-recommendation 2). Contrarily to what the OECD had recommended, the *Beca Salario* programme maintained its distributive character, whereas the objective of supporting students who may abandon school for financial reasons gets diluted in this universal design (sub-

recommendation 3). However, an ongoing diagnostic study is assessing the effectiveness of the programme, which may motivate evidence-based policy change in the near future.

Skills training and entrepreneurship

The second recommendation instructs **that training programs should be more responsive to the needs of the economy and target the informal sector.** Solidifying vocational training in the secondary and tertiary levels can ensure better skills matching in the labour market. The transition of workers from the informal to the formal sector can be supported via skills certification programmes. The development of entrepreneurship skills from the early ages, as documented in many OECD studies, is key to stimulate business creation and the dynamism of the economy.

2. Progress reported on sub-recommendations

	Progress	Timeframe
4. Better involving the private in the program designs and provision of work-based learning opportunities for young people.	Progress	Medium-term
5. Develop entrepreneurial skills early on in the education programs	Progress	Medium-term
6. Improving the effective counselling and job placement services.	Modest progress	Short-term
7. Develop skill certification for both informal and formal workers.	Modest progress	Medium-term

On this realm, the State of Morelos has made progress, with the creation of apprenticeship courses on tourism and gastronomy and a youth entrepreneurship centre, together with the organisation of youth business innovation camps (sub-recommendations 4 and 7). In other areas, however, the situation remains the same, as there are not sufficient programmes to support the self-employed and informal workers (sub-recommendations 5 and 6). The capacitation for self-employment is quite basic and not enough diversified across different stages of business development. The certification of skills via accredited CONOCER centres was not sufficiently solidified, and effective counselling services could be improved further.

Taking the high road to innovation

The third recommendation regards **improving knowledge creation, diffusion and exploitation.** Morelos has strong potential for innovation, given the significant number of research centres in the region. Nonetheless, this knowledge creation faces limited access to markets and does not percolate across firms in the state. In this sense, this recommendation proposes to develop a more outward-looking innovation system.

3. Progress reported on sub-recommendations

	Progress	Timeframe
8. Supporting the commercialisation of innovative ideas.	Progress	Medium-term
9. Improve access to capital and financial support for knowledge-based start-ups	Modest progress	Medium-term
10. Bridge the gap between public research facilities and the business sector with co-operation mechanisms	Progress	Long-term

Driven by the Ministry for Innovation, Sciences and Technology, progress has been made on this realm. With new specialised staff, the ministry is in a better position to give

business and legal advice to companies (sub-recommendation 8). The ministry offered capacitation for business owners and researchers to design joint innovative projects and apply for federal funds (sub-recommendation 10). Agreements with international start-up incubators have provided financial and product-development support to a few companies (sub-recommendation 9). The programmes *InnovaTIC* and *Primer Impulso,* which offer access to seed funding streams, are a good start but can be further developed (sub-recommendation 9).

Strengthening the role of the Human Capital Council

The fourth recommendation refers to **strengthening the role of the Human Capital Council (HCC) in what regards upskilling the labour force and building an integrated vision of regional development.** The Council is the first of its kind in Mexico and seeks to improve human capital development and innovation across the state in a holistic way. Beyond the current mandate of matching and networking, the Council can expand its role to undertake analyses of current and future skills required in the labour market.

4. Progress reported on sub-recommendations

	Progress	Timeframe
11. Better define the Council's mission and operating model.	Progress	Short-term
12. Work closely with state labour market training agencies in the definition of priorities.	Progress	Medium-term
13. Ensure a more varied composition of sectoral representatives.	Progress	Short-term
14. Adopt a demand-led approach to training content by involving the private sector into the early definition of programmes.	Progress	Long-term
15. The definition of sectoral groups should not preclude cross-fertilisation with the participation of thematic areas in sectorial activities to develop a common vision.	Significant Progress	Medium-term
16. Measure and evaluate the HCC's outcomes based on agreed targets.	Modest progress	Short-term

Since the 2017 Territorial Review of Morelos, the Human Capital Council has made progress by better defining its structure, mission and objectives (sub-recommendation 11). It has also substantively taken up its role as co-ordinator and has strongly reached out for the different stakeholders, including government bodies, academia and business representatives, from each one of the sectors defined as strategic for the economy (sub-recommendations 12 and 14). Education was made a transversal sector, given its impact on the other economic sectors, as well as Innovation and Research (sub-recommendation 15). The Council co-ordinator has played a leading role in organising activities and reaching out to partners (sub-recommendation 13). In the field of policy monitoring and evaluation, the Council has set up 9 indicators to monitor progress, but they merit some reconsideration (sub-recommendation 16).

Spatial Planning

Recommendation 5 addresses the issue of **better implementing spatial planning.** The current system of land use planning lacks an integrated vision of the territory and of urban development policies. This can be partially attributed to the sectorial inclination of national urban policies and the fact that the state has to follow national regulations. Even so, little participation, accountability and enforcement are carried out. These elements require co-ordinated action with other levels of government and long-term efforts to make

reforms effective. The two sub-recommendations focus on improvements in the spatial planning system and on the continuity and enforcement of adopted plans.

5. Progress reported on sub-recommendations

	Progress	Timeframe
17. Build more accountability into the spatial planning system and ensure the continuity of territorial and urban development plans.	Modest progress	Long-term
18. Create an independent council, with technical competencies, to assure continuity and effective implementation of long-term spatial planning.	Progress	Medium-term

Morelos has made progress by creating the State Council for Spatial Planning (*Consejo Estatal de Ordenamiento Territorial* – CEOT) in 2017. This council replaces the former CEDU, with a leaner composition and stronger technical competencies (sub-recommendation 18). Nonetheless, accountability and continuity to territorial and urban development plans merit stronger attention (sub-recommendation 17). The Ministry for Sustainable Development does not have sufficient staff and capacity to update, co-ordinate, enact and implement plans. Municipalities do not receive sufficient training to perform their functions, and when plans are designed, they are often not enacted. This hampers co-ordination between state and municipal levels.

Metropolitan policy-making and implementation

As for recommendation 6, **urban policies should be designed at the metropolitan scale.** Morelos has two metropolitan areas (Cuernavaca and Cuautla) recognised by the national statistics office (INEGI). Both receive resources from the Federal Metropolitan Fund, which are managed by the two correspondent Councils for Metropolitan Development. These councils tend to have too many actors and lack the active involvement of the Ministry for Mobility and Transport, an essential actor to ensure coherence in urban planning and to reap the benefits of agglomeration. Also, the use of the funds tends to finance small municipal projects rather than comprehensive metropolitan initiatives.

6. Progress reported on sub-recommendations

	Progress	Timeframe
19. Reduce the number of actors in the governance of metropolitan areas but include the State Ministry for Mobility and Transport in the co-ordinating agency of the metropolitan areas.	Progress	Medium-term
20. The Metropolitan Fund should respond to a comprehensive urban development plan.	Modest progress	Long-term

The state has made progress in this area by including the State Ministry for Mobility and Transport as a permanent member of the Council for Metropolitan Development of Cuernavaca (sub-recommendation 19). It is yet to be seen how the state ministry will be able to make their voice heard in the Council. The Councils of Cuernavaca and Cuautla have not as of yet adopted long-term, integrated strategies for metropolitan development, and ongoing projects lack a clear metropolitan dimension (sub-recommendation 20). This complex task requires competent personnel, time to engage with the citizenry, diagnostic studies to support changes, and long-term commitment to enact and implement them.

Rural policy and tourism

Recommendation 7 instructs that **Rural Policy must go beyond agriculture and develop further synergies with the tourism sector.** Following the OECD's Rural Policy 3.0 findings, this recommendation invites Morelos to take a multi-dimensional approach to rural development, going beyond agriculture and leveraging synergies with other sectors such as tourism. This policy entails a bottom-up approach to development and investment in productive regional assets and in well-being, rather than compensatory measures based on subsidies. Such approach also requires maintaining rural amenities and biodiversity, with the aim of supporting Morelos' tourism industry.

7. Progress reported on sub-recommendations

	Progress	Timeframe
21. Adopt a multi-dimensional territorial approach to rural areas going beyond agriculture and channel financial resources towards productive investment projects.	Progress	Long-term
22. Develop tourism policies in co-ordination with other policy areas and in accordance with environmental preservation.	Progress	Medium-term
23. Elaborate and deliver appropriate training to upskill workers in the tourism sector. Develop support for tourism entrepreneurship.	Significant progress	Medium-term

The State of Morelos has made progress on sub-recommendations 21 and 22, and significant progress on sub-recommendation 23. New routes of rural tourism are being developed around premium products such as rice and avocado. Training courses in the fields of tourism and agriculture are being offered, and certificates of quality are being awarded. The eco-tourism programme called *Pueblos Mágicos* (Magical Towns) is getting international recognition and attracting visitors to the area. The regional brand *Orgullo Morelos* has been expanding and consolidating.

Connectivity and mobility

Recommendation 8 states that **accessibility of the region should strengthen both internal and external connectivity.** Morelos' geographic position represents an asset to the state, located close to Mexico City and on the routes to the Atlantic and Pacific Coasts. Investments in infrastructure which favour connectivity within urban areas, across the state and with other States can help bring opportunities to other areas of the state and advance inclusive growth. Such investments should integrate a broader, comprehensive policy package that seeks to leverage regional assets and avoid "leaking by linking".

8. Progress reported on sub-recommendations

	Progress	Timeframe
24. Investments in railroad and road networks should continue to improve the accessibility of the region to external markets.	Progress	Long-term
25. Improve urban mobility while taking into account the environmental dimension.	Progress	Long-term
26. Strengthen internal connectivity by better connecting marginalised municipalities.	Modest progress	Long-term

Morelos has made progress in improving its connectivity with Mexico City and to the coasts, with the construction of the Highway XXI Century and the project of the

railroad station in Cuautla (sub-recommendation 24). The goal of sustainable urban mobility received considerable attention from the government in the past year (sub-recommendation 25). Several different items were advanced, notably: organisational change with the creation of the State Council for Spatial Planning (CEOT) and the update of the Air Quality Programme (PROAIRE); creation of a green zone of Cuernavaca; downtown Cuernavaca was made exclusive for pedestrian traffic; and conversion of 3 000 taxis to natural gas. The internal connectivity of the state, including rural areas and marginalised municipalities, has not advanced sufficiently. Roads affected by the earthquake, however, are being reconstructed under the Fonden Road Plan, and dirt roads are being paved under the State Road Plan (sub-recommendation 26),

Sustainable development

Finally, recommendation 9 concerns **preserving the environment by co-ordinating and implementing policies to mitigate climate change.** It addresses the issue of sustainable development under three aspects: comprehensive planning; co-ordination at national and international levels; and non-fossil fuelled transportation. Tackling the environmental challenges requires policy co-ordination across a wide range of relevant sectors including transportation, housing, environmental preservation, tourism, agriculture and renewable energy.

9. Progress reported on sub-recommendations

	Progress	Medium-term
27. Design and implement a comprehensive plan for environmental protection	Progress	Medium-term
28. Foster the connection of state programmes to national and international environmental programmes	Modest progress	Long-term
29. Promote the substitution of fossil combustion with gas for public transportation	Modest progress	Medium-term

The State of Morelos has made progress in this recommendation. The state is revising and promoting different planning instruments, such as the PEGROTM, the PEOTyDUSEM and the PROAIRE (sub-recommendation 27). Logically enough, these plans have not been implemented yet, and municipalities still need to harmonise their own plans and programmes with those ones. On non-fossil fuelled transportation, the state supported the conversion of 3 000 taxis to natural gas, but the transition to natural gas in public transportation modes such as buses is missing, especially since the *Morebus* project was cancelled (sub-recommendation 29). Lastly, the engagement in outreach and partnerships can become more strategic in the future, in liaison with national authorities (sub-recommendation 28).

Vertical and horizontal government co-ordination

Recommendation 10 refers to **fostering co-ordination across levels of government**, both vertically and horizontally. Improving co-ordination with other regions can bring benefits in terms of public service provision, economic growth, administrative capacity and reinforced bargaining power vis-a-vis the central government. Key institutions such as the COPLADES can help better aligning strategic planning objectives between the state and municipal levels while providing enough room to adapt policies to the local context.

10. Progress reported on sub-recommendations

	Progress	Medium-term
30. The State of Morelos should seek strategic alliances with neighbouring regions and leverage the CONAGO forum.	Modest progress	Long-term
31. Strengthen the roles of the COPLADES to improve strategic co-ordination between state and local administrations.	Modest progress	Medium-term

There has been modest progress for the two elements of this recommendation, although the potential for improvement remains high. Indeed, the co-ordinating role of the CONAGO has been maintained, but not strengthened (sub-recommendation 30). In enhancing relationships with neighbouring states, some co-operation agreements in the relevant areas of research and tourism have been signed. Co-ordination meetings between ministers of economic development have continued taking place. Co-ordination between the state and municipal levels shows some evolution (sub-recommendation 31). Relationships have been strengthened via an enhanced presence of representatives of the state to the meetings at COPLADEMUN. The state has also subscribed an agreement with some municipalities to channel resources from PRODEMIN to improve territorial planning and build an atlas of risks.

Governance and business environment

Recommendation 11 addresses **the need to improve governance mechanisms and business climate.** Restoring trust in the public administration, simplifying administrative procedures and providing the tools for enhanced accountability remains one the most pressing issues in Morelos, as it is the case in Mexico at large. Addressing these issues requires a long-term perspective.

11. Progress reported on sub-recommendations

	Progress	Medium-term
32. Strengthen public administration and its long-term planning and implementation capacities.	Progress	Long-term
33. Restore trust in the public administration by adopting the national anti-corruption policy and creating mechanisms for transparency and accountability.	Progress	Long-term
34. Strengthen the capacities and scope of the State Council for the Evaluation of Social Development.	Significant progress	Medium-term

Progress on these three fronts has been overall significant. A legal reform requires the administration to develop medium- and long-term planning strategies, but little or no evolution has been made on the development of a more stable civil service in the public administration (sub-recommendation 32). Reforms have also been undertaken to adapt the national anti-corruption regulation to state law, but some political frictions and legal suits are still preventing the approval of the law; and no advancement has been made to provide a single-stop shop allowing citizens to navigate the myriad of available funds (sub-recommendation 33). Finally, the evaluation mechanisms for social policies have been strengthened with the provision of further funds and human resources to the COEVAL (sub-recommendation 34).

Regional and local finances and investments

Lastly, recommendation 12 concerns the **management of state funds**, including transfers to municipalities, in order to improve the state's capacity to raise revenue and spend it efficiently.

12. Progress reported on sub-recommendations

	Progress	Medium-term
35. Undertake an audit of both the tax base and the tax collection mechanisms to improve own revenue collection in the State of Morelos.	Modest progress	Short-term
36. Improve property tax revenue by updating cadastres, and then effectively collecting taxes.	Modest progress	Long-term
37. Support local governments in increasing revenue from municipal services.	Modest progress	Medium-term
38. Reform the transfer formulas to create incentives based on needs and policy outcomes.	Modest progress	Medium-term
39. Resources for productive investments should have a results-oriented assignment mechanism conditional on co-ordination between municipalities	Modest progress	Medium-term

Progress has been positive but modest. Some steps have been taken to increase the tax base at the regional level (sub-recommendation 35). Agreements have also been signed between regional and some municipal tax administrations to transfer coercive power to the regional tax administration in an effort to pull resources and increase administrative capacities (sub-recommendation 36). Training of municipal public servants specialised on fiscal matter is also being undertaken (sub-recommendation 37). Measures have also been taken to improve the quality of public expenditure (sub-recommendation 39). These efforts go in the right direction. For changes to be promoted in the medium- and long-term, a more complex set of answers is required, as well as stronger political buy-in from the different stakeholders.

Reconstruction and recovery efforts after the 19S earthquake

On 19 September 2017, an earthquake of 7.1 magnitude hit Morelos, Puebla and the Greater Mexico City area. This earthquake was the deadliest one of the past 32 years in the country. In Morelos, it caused 74 casualties and 1 944 physical injuries. According to official statistics, 22.5% of commercial establishments shut down, 7 410 homes suffered total loss, and 16 386 were partially affected. Medical centres, schools, public offices, historic and cultural buildings, hydraulic infrastructure and roads were also damaged.

In the aftermath of the disaster, the state put together a well-co-ordinated emergency response, together with municipal civil protection authorities. Rescue actions included creating Emergency Operations centres, installing shelters, isolating risk sites, transferring the wounded to hospitals and registering casualties. In each of the 33 municipalities, a civil servant from the state government cabinet was appointed as liaison staff to co-ordinate the disaster response, including reconstruction and recovery efforts.

So far, the State of Morelos has delivered a broad and well-organised reconstruction process, co-ordinated by the decentralised agency *Unidos por Morelos*. This agency is responsible for co-ordinating efforts across levels of government, managing public funds with transparency and keeping an open communication channel with civil society. The strategy led by *Unidos por Morelos* consists of direct reconstruction of infrastructure,

financial assistance to housing reconstruction, which is led by private foundations, and financial support to entrepreneurs and firms to recover their businesses. The commission COEVAL is monitoring this process and will assist the agency in evaluating its policies.

Such comprehensive reconstruction efforts have therefore diverted significant state resources from previously agreed actions and programmes. To illustrate, the liaison staff could not dedicate to regular functions; the public transportation project *Morebus* was cancelled; state funds had to be reoriented. With less financial resources, less personnel and an altered course of action, the State of Morelos has understandably invested less in the policy areas that are not directly concerned by reconstruction and recovery. In this sense, the impacts of the earthquake affect the progress of the OECD recommendations made in the Territorial Review, which was taken into account in the Review.

Recommendations for reconstruction and way forward

The State of Morelos can further leverage their policy response, along the following lines. The reconstruction process should, beyond returning to the previous situation, improve infrastructure conditions and quality of life of residents. Ensuring safety in reconstructing schools, hospitals, fire stations and public buildings must be a priority. It is also an opportunity to rethink spatial planning and urban development. Housing resettlement should prioritise the needs of the most vulnerable population and be connected with public transportation networks. Technical assistance should be provided for those who opt for housing self-construction, and for those who opted for the private foundations, the quality of constructions should be closely monitored. In the property registry process, the state should beware of pre-existing rights, and promote women's tenure security. Morelos should invest more strongly in disaster reduction management planning, data collection, and transparent risk governance.

Towards a comprehensive approach to logistics and transport in Morelos

The report brings a special focus on connectivity and logistics, considered as key structural enabling factors for inclusive growth and well-being. Policies to improve connectivity must be analysed within the framework of policies addressing the other enabling factors (education, innovation and business environment), which were developed in the TR of Morelos. Improved connectivity will reduce transport costs for businesses based in Morelos, expand the market for local producers and achieve better integration with centres of production and consumption across Mexico.

In co-ordination with the federal government, important investments were made on road connectivity, namely in the *Autopista del Sol* running through the capital Cuernavaca, which is a key north-south federal highway connecting Mexico City to Acapulco and the south border. Investments were also made to strengthen east-west road connections, particularly the link with Puebla, and in regional airports.

In the freight rail sector, Morelos has 259 km of rail alignments but currently no operational railway line. The state is rehabilitating a 103 km link from the Cuautla industrial park north to the municipality of La Paz, in the southeast of the Mexico City conurbation. So far only seven kilometres of line in Cuautla have been rebuilt. Together with the industrial park, the rail line will serve agricultural businesses in the region and a new intermodal container depot aimed at developing a more diversified economic pole in Cuautla. Shifting freight from road to rail in the interests of road safety is an important secondary objective.

Recommendations for the logistics and transport in Morelos

Given that resources are limited, planning and prioritisation are essential to best address Morelos' infrastructure needs and build consensus around investments made. A high hurdle rate of return on investment can be used to select projects and establish priorities. Cost-benefit assessments can help identify promising projects. However, allocating public resources between dissimilar projects – highways versus rail or highways versus rural roads – can only be done on the basis of a broader strategy. Strategic, medium-term planning can foster a more balanced vision of development, overcoming short-termism.

The productivity and connectivity strategy developed by Morelos appears appropriate to allocating the relatively modest sums of state (as opposed to federal) budget for roads and rail. In future elaborations, it would nevertheless benefit from examination of data on traffic and modelling of freight flows, available from the Federal Government's Transport Institute. Current policy documents focus on the details of individual investments but lack an explanation of the approach to project prioritisation and value for money. Morelos should seek to develop public policy statements on strategic infrastructure planning for connectivity. Working hand in hand with national regulators such as the rail regulator would also allow Morelos to benefit from their capacity in analysing particularly complex processes and projects.

Chapter 1. Context

This chapter introduces the context of the State of Morelos, concerning the economy, labour force and security. The state has kept pace with the trends observed in 2016. It presents the recommendations set in the Territorial Review of Morelos *of 2017. The implementation of these recommendations is the basis for assessing progress and indicating areas for further change. Some challenges remain, such as low skill levels and informality of the economy. The methodology adopted to conduct the present Review is detailed in this chapter.*

Methodology of the review

In 2016, the OECD conducted a **Territorial Review of Morelos**, Mexico, which was approved by the OECD Regional Development Policy Committee in the session of 7 November 2016 and published in 2017. Building on evidence-based analyses of regional policies, the report provides 12 main recommendations and 39 sub-recommendations (OECD, 2017[1]). The recommendations include:

- Strengthening the role of the Council for Human Capital to ensure maximum impact over the medium- and long-term by promoting initiatives that will enhance innovation, a better match of education and training policies with labour market demand and that will foster inclusive growth.
- Better leveraging urban and rural policies and programs to improve accessibility and connectivity in the state (including enhancing mobility inside its metropolitan areas, better linking rural areas to markets), to increase productivity in rural activities, and to better leverage the region's potential for tourism.
- Ensuring that the region's development does not pose a threat to the preservation of its natural amenities by promoting sustainable and environmentally friendly activities.
- Improving the co-ordination and implementation of national policy strategies in the state, and better connecting regional programs to local activities. The need to implement policies to raise fiscal revenues and increase capacity at the municipal and regional scale is equally important.

To follow-up on the recommendations, the OECD conducted the present **Review of Morelos**. The objectives of the *Review* are to (i) assess the main regional policy changes since 2016 and the extent to which the recommendations from the *Territorial Review* (TR) have been implemented, accounting for the impacts of the earthquake which occurred during this implementation period; (ii) focus on logistics and accessibility to ensure that the State of Morelos best takes advantage of its favourable geographic location; and (iii) support the implementation of the recommendations on the Council for Human Capital.

The OECD team, together with international experts as peer-reviewers, carried out an official mission in December 2017 to evaluate the progress that the state government of Morelos made in implementing the recommendations from the Territorial Review. The OECD held bilateral interviews with public officials from the state government as well as actors from the business community and public research institutions, to understand challenges and bottlenecks and to assess changes.

In addition, the OECD team focussed on the impacts of the earthquake that hit Mexico on 19 September 2017. Morelos being at the epicentre of the earthquake, significant damages and losses occurred. The team visited some of the places most affected by the earthquake and met with key people in charge of the reconstruction process (public and private), as well as civil society.

The structure of this review is organised as follows:

- The present Chapter 1 introduces the methodology, context and main recommendations, based in the Territorial Review of Morelos conducted in 2016 and published in 2017.

- Chapter 2 assesses the progress in each of the 12 recommendations. It offers a summary of progress and a detailed analysis of the changes promoted. It also indicates how the State of Morelos can continue making progress in these areas. It is complemented by the detailed table of Annex A, which tracks down progress in each of the 39 sub-recommendations.
- Chapter 3 discusses the earthquake of 19 September 2017, notably: impacts and damages, policy responses from Mexico and from Morelos, suggestions about the reconstruction process, and indications to reduce disaster risks in the future.
- Chapter 4 emphasises the issue of logistics, discussing the project of railroad rehabilitation and construction in Cuautla and proposing recommendations for the future, in order to enhance the accessibility and connectivity of Morelos.

Context of the State of Morelos and new challenges

The Territorial Review dedicated a chapter to the socioeconomic diagnostic of the State of Morelos. This section summarises this diagnostic and presents new challenges that have emerged since the TR. For a more complete analysis of the economy and governance structure of the state, reading the OECD Territorial Review of Morelos is recommended (OECD, 2017[1]).

Since the launch of the TR, the context of Morelos has kept similar trends. GDP per capita and population are growing, but the population is growing faster than GDP per capita. The population is still quite young: the median age was of 28 years old in 2015, according to data from INEGI. The issue of informality has remained pretty much stable since 2005, with a rate of 68%. The perception of security has remained low since 2011, having decreased from 18% to 13%. The challenges of promoting full, formal employment and ensuring public safety remain important, thus. A new challenge that has emerged is reconstruction after the earthquake and opportunities for urban development and local finances that come associated with it.

The State of Morelos is one of the 32 states and federal entities that constitute the United States of Mexico. It is located in the centre of the country, bordering the Federal District to the south (Figure 1.1). The state is one of the smallest in Mexico, with a population of 1.9 million in 2015 corresponding to 1.6% of the national population (INEGI, 2016[2]). It consists of 33 municipalities, with the smallest municipality counting 7 166 people and the largest municipality, Cuernavaca, with a population of 366 321 inhabitants (INEGI, 2016[2]).

The state has three metropolitan areas, two officially recognised by the federal INEGI (Cuernavaca and Cuautla), and one delimited by the state only (Jojutla). Metropolitan areas are defined as the conjunction of contiguous municipalities with a high population density and, for the periphery, municipalities with substantial commuting patterns towards the core of the ZM. Overall the 3 metropolitan areas account for more than 80% of the population in Morelos, encompassing 16 municipalities out of the 33 present in the State of Morelos. Even though these metropolitan areas can be classified as of medium and small size, agglomeration benefits and potential synergies are observed (OECD, 2017[1]). The OECD had suggested investing in more solid planning instruments and funding structures to manage metropolitan areas, and improved connections between the three metropolitan areas (OECD, 2017[1]).

Figure 1.1. The State of Morelos is in the centre of Mexico

Source: Map based on INEGI (2010[3]), "Marco Geoestadístico 2010 versión 5.0" (Geostatistician Model).

The economy of Morelos is quite diversified. The most prominent sector is manufacturing, notably automotive and chemicals, with the presence of large multinational firms. The agricultural and service sectors are considerably large, and there are 43 research centres linked to technical universities. The territory has a year-round pleasant weather and is rich in natural amenities as well as traditional cultures, factors that have contributed to propel tourism. Most tourists come from other parts of Mexico and stay for the weekend or short holidays.

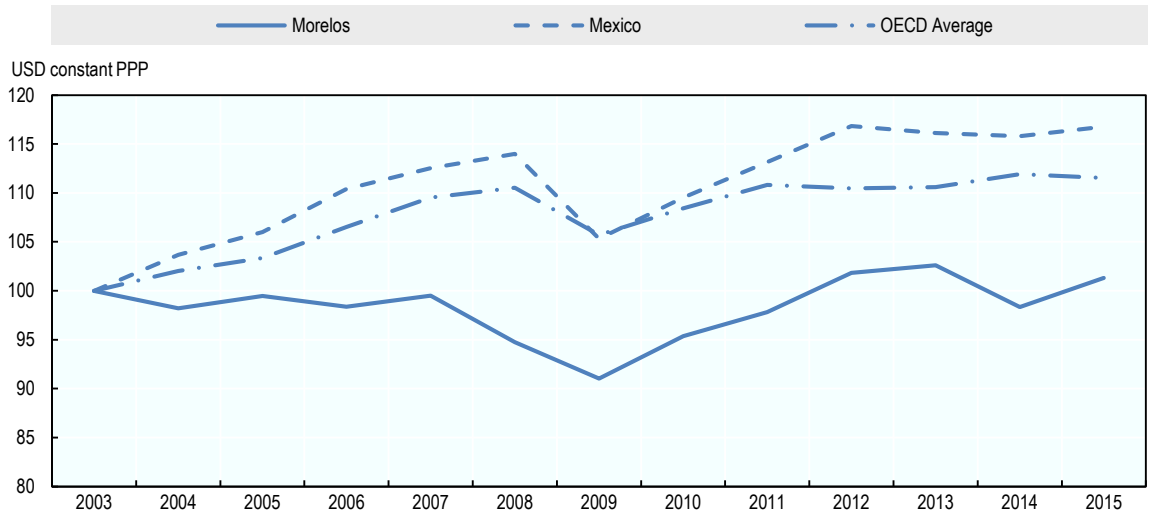
The State of Morelos is recovering from the 2009 crisis (Figure 1.2). Since 2014, a steeper recovery can be noticed, even more than the Mexico average. Still, the state had, as of 2015, a GDP per capita of USD 11 471, whereas the Mexican average is of USD 15 482. More worrisome, between 2003 and 2015 population growth outpaced GDP growth in Morelos (Figure 1.3).

The *Territorial Review* summarised the key assets that Morelos has (OECD, 2017[1]):

- **Geographic location**: Morelos is a small state with a favourable geographical location, in close proximity to Mexico City.
- **Youth premium**: The share of the population under 15 over the total working age population is considerably higher (41.2%) than the OECD average (27.5%). This youth premium represents a workforce potential that can be tapped into.
- **Diversified economy**: While the economy of Morelos is specialised in the manufacturing sector, the services, agricultural and public sectors also make important contributions to employment.

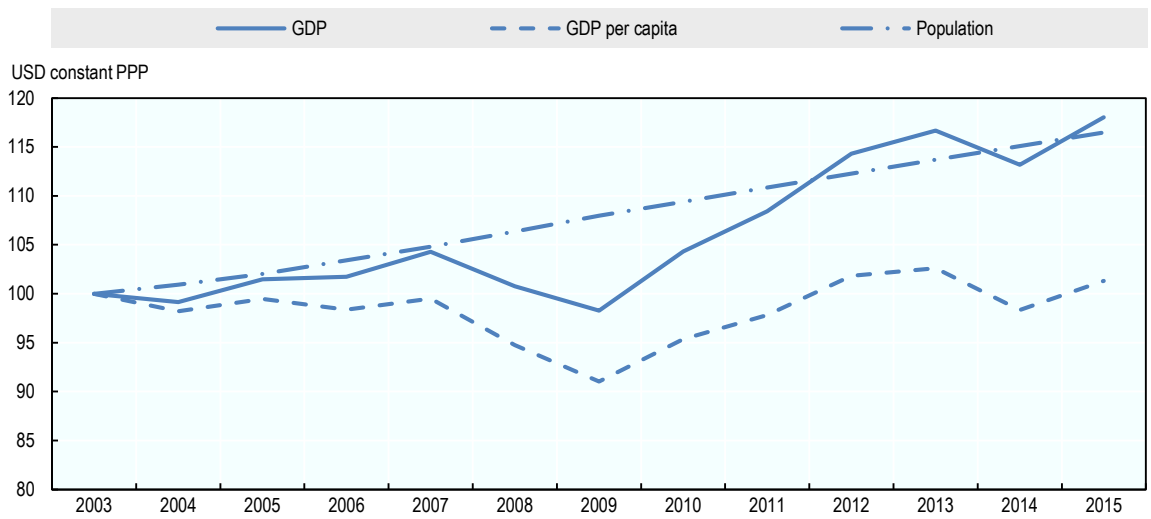
- **Innovation hub**: The state has the potential to become an innovation hub. To date, it contains 44 prominent research institutes and a Science and Technology Park that have contributed to more patents per capita than the Mexican average.
- **Amenities for tourism**: Morelos is rich in natural and cultural amenities and has favourable climate conditions, which are critical drivers for tourism.

Figure 1.2. GDP per capita trend in Morelos and Mexico



Note: GDP per capita as of 2010 USD Constant PPP.
Source: OECD (2016[4]), OECD Regional Database.

Figure 1.3. Population growth outpaced GDP growth



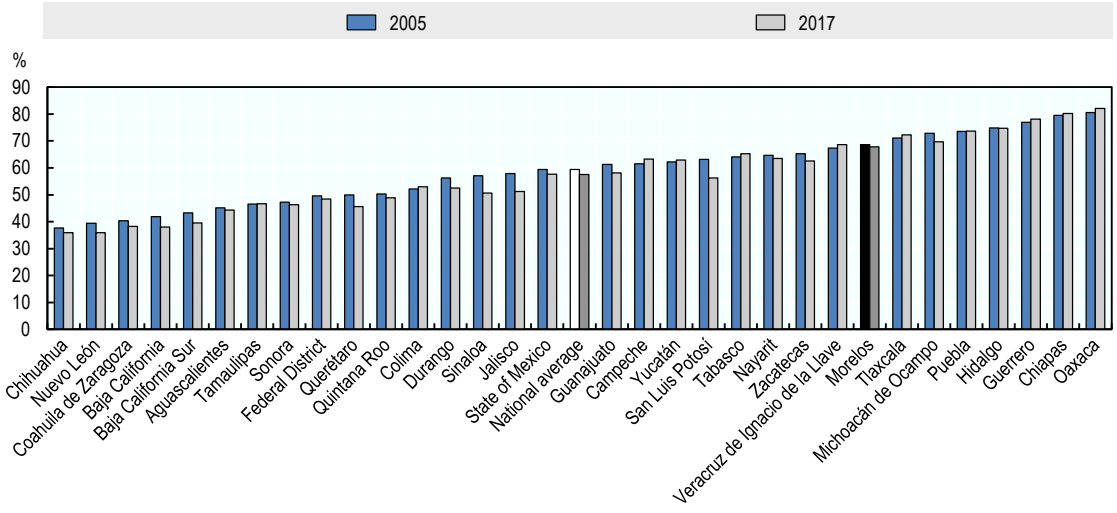
Note: GDP per capita as of 2010 USD Constant PPP.
Source: OECD (2016[4]), OECD Regional Database.

Alongside these assets, the Territorial Review had signalled the main bottlenecks and challenges faced by the State of Morelos (OECD, 2017[1]). Given that the bottlenecks reflect structural conditions, medium- and long-term actions will be necessary to address them. Considering the short time period since the Territorial Review was elaborated, it is only logical that these challenges still remain to be addressed. These are:

1. A low-skilled labour force and poorly trained entrants to the labour market drags down productivity and innovation.
2. A large informal economy and resulting insecurity represent additional bottlenecks to growth.
3. Improving accessibility to external markets and creating better internal connectivity will help leverage Morelos' geographic advantage.
4. Overcoming the fragmented and inward-oriented innovation ecosystem.
5. Ensuring that regions realise their agglomeration benefits while promoting environmental sustainability.
6. Unleashing the growth potential of rural areas.
7. Limited capacity at, and co-ordination with sub-national governments and neighbouring regions.

The informality of the economy, for example, changed very little in the past ten years (Figure 1.4). Between 2005 and 2017, informality in Morelos decreased slightly from 68% to 67%. It remains above the national average, which was 57% in 2017. This shows how much informality is an entrenched problem of the Mexican economy as a whole, and that most states did not succeed in modifying the trend of the last ten years.

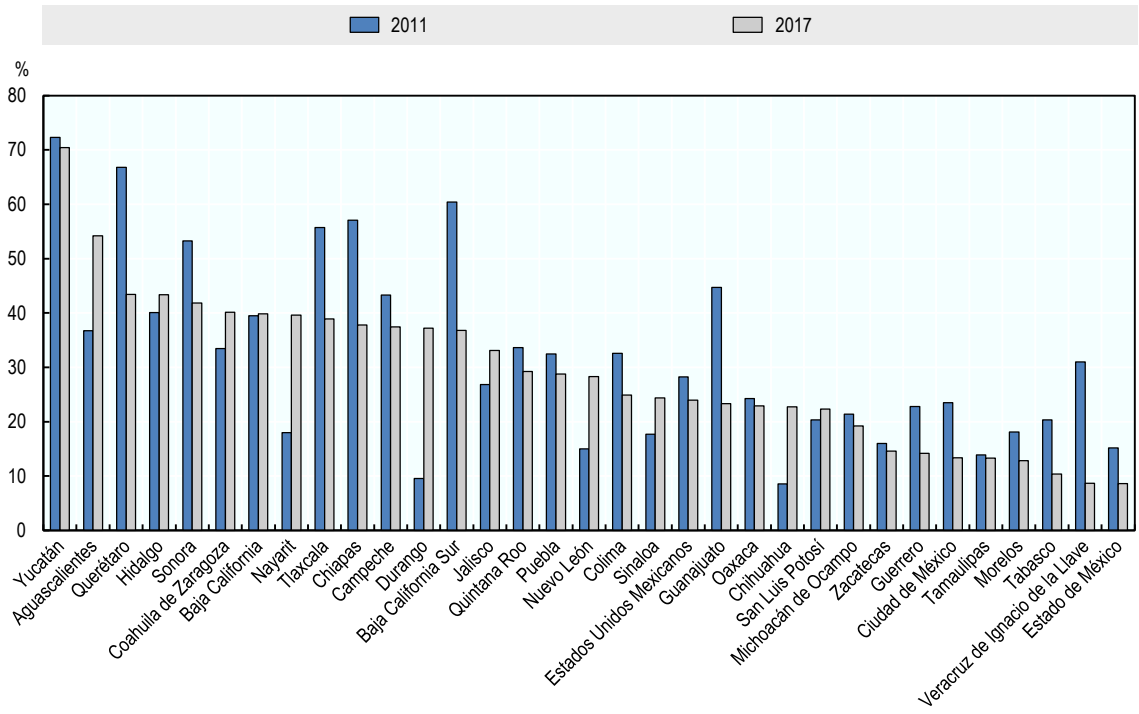
Figure 1.4. Informality in Mexican states, 2005 and 2017



Source: Own analysis based on data from (INEGI, 2018[5]) INEGI Databases, http://www.inegi.org.mx/.

In other areas, such as public safety, it is more complex to assess changes. On the one hand, in 2016 the State of Morelos assumed the central command on matters of public safety (*Mando Único)*. It created a security centre to centralise police actions and systematically collect data. Several security cameras were installed in different parts of the state, which are constantly monitored in the control centre. The state reports lower criminality rates since the creation of this model. On the other hand, for being quite recent, these structural changes did little to alter the perception of criminality and security among residents. The perception of security remains quite low in the State of Morelos (Figure 1.5). It even declined from 18% in 2011 to 13% in 2017. Furthermore, it is difficult to assess which numbers of lower criminality can be attributed to the new structure and which ones are incidental.

Figure 1.5. Perception of security between 2011 and 2017, per state



Source: Own analysis based on data from (INEGI, 2018[5]) INEGI Databases, http://www.inegi.org.mx/.
Note: State values are calculated based on the population aged 18 years old and over.

Main recommendations

Based on the identified assets and bottlenecks, in the *Territorial Review,* the OECD provided 12 main recommendations and 39 sub-recommendations for the State of Morelos (see Annex A for sub-recommendations). These recommendations indicate changes in policy approaches that may take some time to be fully implemented and require continuous efforts for several years.

Based on the 12 recommendations, a Framework of Action was designed to guide sustainable regional development in the State of Morelos (Figure 1.6). This Framework is grounded in inclusive and environmentally-friendly policies that can support the

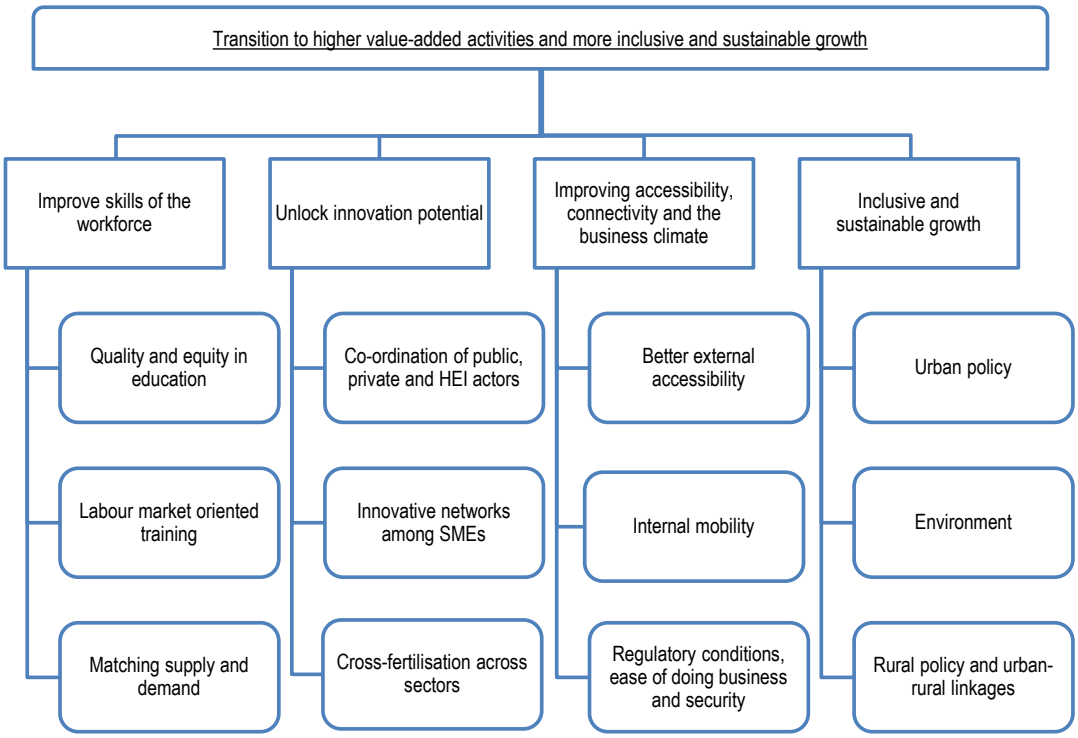
transition toward higher value-added activities and more inclusive and sustainable growth. In short, the Framework for Action signals pathways to start promoting change.

Table 1.1. Main recommendations

1	Improve the quality of basic **education**, especially in peri-urban areas and lagging rural communities, and increase participation in upper secondary and tertiary education
2	Ensure **training** programmes are more responsive to the needs of the economy and target the informal sector too
3	Improve **knowledge** creation, diffusion and exploitation
4	Strengthen the role of the **Council for Human Capital** to promote the upskilling of the labour force and an integrated vision
5	Spatial **planning** requires a better implementation strategy
6	**Urban policies** should design and implement policies at the **metropolitan scale**
7	**Rural policy** must go beyond agriculture and develop further synergies with the tourism sector
8	**Accessibility** of the region should strengthen both a. connections to external markets in neighbouring states and export and b. internal connectivity
9	Preserving the **environment** by co-ordinating and implementing policies to mitigate climate change
10	Foster **co-ordination** of the state administration with municipalities, and with neighbouring states
11	Improve **governance** mechanisms and the **business climate**
12	Morelos should improve the management of its own **funds**, including transfers to municipalities

Source: OECD (2017), *OECD Territorial Reviews: Morelos, Mexico*, http://dx.doi.org/10.1787/9789264267817-en.

Figure 1.6. Framework of Action



Source: OECD (2017[1]), Territorial Review of Morelos, Mexico.

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OECD (2016), *Regional Database*, https://stats.oecd.org/Index.aspx?DataSetCode=REGION_DEMOGR. [4]

Chapter 2. Monitoring and evaluation of recommendations

This chapter monitors and evaluates the progress in the 12 recommendations, divided into three broad areas: human capital and skills, integrated territorial development, and governance and finance. It offers a detailed analysis of the changes already promoted. The State of Morelos has made some progress in all areas. Given the limited time since the Territorial Review of 2017, long-term changes could not be implemented but seem to be underway. It also provides directions for Morelos to continue making progress in the future. Some plans were enacted but are yet to be implemented and the creation of state councils and similar bodies still has to be followed by independent and effective actions. The chapter is complemented by the detailed table in Annex A, which traces progress in each of the 39 sub-recommendations.

Assessing progress in the recommendations made in the *Territorial Review of Morelos,* published in 2017, the methodology is divided into four levels (Table 2.1). The scale attributed is a direct component of the progress made since the last evaluation. That is to say, the scale does not reflect how well a given policy, instrument or tool is applied in general, or how well Morelos' economy and institutions are performing as a whole. It reflects how much progress has been made since the Territorial Review. For instance, an area of government that was particularly well-developed but that has not made particular advances since 2016 may be attributed 0 or 1, whereas an area in which greater efforts were necessary may receive due recognition for its improvements by being attributed a 2 or 3.

Table 2.1. Levels

3	Significant progress
2	Progress / Partial implementation
1	Modest progress / Further implementation is needed
0	No progress / Change needs to be addressed

The OECD pays consideration to the fact that only one full year has passed since the Territorial Review of 2017. The table in Annex A specifies the expected timeframe for implementation of each of the sub-recommendations. Indeed, some recommendations could be implemented in the short-term (0 to 1 year) or medium-term (1 to 3 years), whereas others require structural changes that imprint themselves in the long-term (above 3 years). It is expected that short-term changes would have been promoted since the Territorial Review, whereas it is understandable that long-term changes could not be produced or at least evaluated. Moreover, the recovery and reconstruction efforts required after the earthquake have diverted significant state financial and human resources.

Logically enough, this review's suggestions go in similar directions than the ones made in the Territorial Review. For this reason, some evaluations might redirect the reader to the previous report. Likewise, for a more complete understanding of territorial development issues in Morelos, reading the Territorial Review of 2017 is strongly recommended.

Human Capital and Skills

Improving the quality of education

Recommendation

1: Improve the quality of basic education, especially in peri-urban areas and lagging rural communities, and increase participation in upper secondary and tertiary education	
Sub-recommendations	
1	Centralise the collection of information/data about schools and student performance in Morelos.
2	Introduce measures to identify low performing students at early stages and mobilise specialised school staff for remedial support in schools located in municipalities at the periphery of metropolitan areas, but also lagging rural areas where a high share of underperforming schools is located.
3	Revise the "universal" dimension of the *Beca Salario* scholarship programme available from lower secondary up to tertiary education (postgraduate studies excluded) in order to better target students at high risk of dropping out for financial reasons. The resources of the current programme go to all students independently of their socio-economic conditions and risk of dropping out.

Summary

This recommendation concerns the quality of education and the participation of students in Morelos. The OECD is concerned 1) that rural schools have more difficulties catching-up in terms of school quality and 2) that students continue to drop out of high school due to lack of financial means and/or lack of structured support to improve their performance. For these reasons, the set of sub-recommendations addresses the need to systematically collect data about students, to provide more structured assistance to low-performing students and to better define the conditions to access scholarships.

The Secretary for Education made limited progress in following the recommendations. For low-performing students, Morelos continues to adopt the same policies than before, whereas the OECD had recommended investing in more well-structured programmes. Nonetheless, the ongoing programmes to support lagging rural and Indigenous schools may improve school quality. The structure and objectives of the *Beca Salario* programme have not been altered. Yet, a diagnostic study is underway to assess the effectiveness of the programme, which may contribute to evidence-based policy change. The software to centralise data collection about students was designed but awaits implementation.

Detailed analysis

It is important that data is systematically collected in schools, in order to evaluate student performance and the education policies in place (sub-recommendation 1). Such system implies that all schools collect the same type of data, following similar categories and classifications, and that data can be easily shared with the Ministry for Education. For these purposes, data has to be anonymised, electronically processed and harmonised. Electronic systems can be fed remotely and regularly. Data collection is the first step to enable policy analysis and inform policy change.

For these reasons, the OECD had recommended the development of software to collect and manage information on schools and students, for all educational levels. The current system in Morelos is not systematised and standardised. Since 2016, Morelos has an

electronic system to follow and evaluate student performance in basic education. Schools use this information to identify low-performing outcomes and offer them tutoring and counselling programmes to improve learning outcomes. It was adopted by half of schools as of December 2017. Completion by other schools is expected to follow when activities return to normal after the earthquake. High schools[1] also collect information and evaluate student performance manually, but they do so in an independent manner.

Following the OECD recommendation, the Ministry for Education designed a proposal of integrated software and presented it before the state trust for funds in February 2018. This software will centralise and harmonise information, making it more accessible and useful than it is with the current system, which is fragmented. The software could generate statistics on enrolment rates, abandonment rates, graduation rates, student performance, scholarship beneficiaries and teaching staff. A subsequent step would be to apply the software in schools, to feed the data. The state should consider beforehand the need to offer training to teaching staff and school administration and to provide the necessary equipment to all schools.

The software would comprise information about students from primary education to high school education. As discussed in the Territorial Review, it is important that students have a dossier that follows them throughout their educational path. The dossier should be associated with a single number per student, in order to ensure that information is not lost if students move schools. The example of Netherlands, which uses a single number per student, the Personal Identification Number, is useful (OECD, 2017, p. 102[1]). With such dossier, the state could better understand how students shift from one level to another, for instance, if enrolment rates in high school are lower than completion rates from elementary school of the previous year.

The *Beca Salario* is a universal cash-transfer programme whose aim is to increase school participation. The OECD had recommended a better definition of the target population, together with close monitoring of the programme (sub-recommendation 3). The State of Morelos did not alter the design of *Beca Salario.* Any student enrolled in a public institution is entitled to the benefit, regardless of socioeconomic status. This redistributive design may look at odds with the programme's objective of assisting low-income students at higher risk of dropping out for financial reasons. In practice, however, students that attend public school in Morelos have a lower socioeconomic status than those who attend private institutions. In this sense, the logic of the programme may be working, which is to be verified by rigorous research.

The State of Morelos is carrying out an evaluation of the programme's effectiveness. It is part of the Multiannual Evaluation Programme 2017-19, and it derives from an agreement signed between the State Commission for Evaluation (COEVAL) and an independent centre of co-operation on education (CEFRAL). It is based on quantitative and qualitative methods, with semi-structured interviews and focus groups, as well as SWOT analysis.

The results of the evaluation may influence the decision to alter the programme's design. One possible change would be in the objective of the programme to universal education coverage at the upper secondary level. This clarification should be made in the official documents of the programme and any divulgation material.[2] The state should continue monitoring students' attendance, as set in the agreement with COEVAL (OECD, 2017, p. 111[1]).

Alternatively, the state could consider other forms of assistance to students, such as public transport passes or meal tickets. Considering that the amount offered in the *Beca*

Salario programme amounts to two bus tickets and one meal per day, the state could provide passes and tickets right away, eliminating the need to implement and monitor a new programme. This option could be less bureaucratic but as effective in reducing drop-out rates in Morelos' public schools.

Sub-recommendation 2 conveys a concern with school abandonment, which is one of the main challenges of the Mexican public education system, at all levels. This challenge is multi-dimensional: it refers to the quality of education and learning but also schools' infrastructure, poverty, health and family support. This sub-recommendation addresses the first aspect, on the quality of education and learning. Better quality can be a factor that prevents abandonment. In this sense, identifying students who are under-performing and offering them specialised assistance may be an effective measure to reduce abandonment rates. Currently, there is no monitoring system in place to identify and follow such students. To do so, the State of Morelos would benefit from developing the software of school data mentioned in sub-recommendation 1. Socioeconomic factors may be addressed by the *Beca Salario* programme mentioned in sub-recommendation 3, or similar financial aid and scholarship programmes.

After the identification of students, the next step would be providing specialised assistance. Morelos has programmes to train and qualify teachers, which could help. In addition to that, the state has to consider a more specific approach, for instance by developing tutoring programmes, after-school classes, or small sessions for homework. Extra-curricular activities such as cultural visits can contribute to making students more engaged and enthusiastic. A parallel course of action is to invest in the link with the students' families, which can provide support and close accompaniment.

Moreover, another policy option to aid these students is to invest in the zones where they students concentrate. The State of Morelos implements two federal programmes in this direction. One programme provides extra resources to schools located in such areas, for infrastructure works, acquisition of materials, or training courses (*Programa Escuelas de Excelencia para Abatir el Rezago Educativo*).[3] The Programme for Educational Inclusion and Equity (PIEE) seeks to increase school participation of students belonging to marginalised groups – Indigenous, migrants and those with disabilities. The main actions supported by the programme are capacitation and training of teachers. The multi-dimensional character of the challenge of school abandonment requires more than trained teachers. School infrastructure, educational materials in Indigenous languages and psychological and financial assistance to Indigenous families have to be considered, too.

Concerning Indigenous students, the State Programme for Indigenous Development 2013-28 (PEDI) foresees objectives related to education. One is to improve bilingual education in the state, which is related to the promotion of culture, and another one is to increase the quality of education in Indigenous schools. Yet, this programme does not reflect the concern with school abandonment. The indicator of school abandonment proposed in the national Special Programme for Indigenous Peoples 2014-18 is not reflected in the PEDI of Morelos, for instance.[4] The PEDI does not contain any reference to the specific challenge of abandonment either.

In all, addressing the challenge of students and schools that are lagging behind is a complex task. Morelos has basic programmes that can provide extra resources to improve infrastructure and train teachers. Beyond that, data collection efforts need to be improved, and specific programmes of tutoring and counselling should be developed. The link with families should be fostered, and the special needs of marginalised groups need to be considered in a more holistic perspective.

Skills training and entrepreneurship

Recommendation

2: Ensure training programmes are more responsive to the needs of the economy and target the informal sector too	
Sub-recommendations	
4	Increase private sector involvement in the updating of training programmes and the provision of work-based learning opportunities for young people.
5	Promote entrepreneurial skills development early in the education system. The integration of current curricula with business insights would promote entrepreneurship and a closer relationship between educational institutions and the private sector.
6	Establish a monitoring framework for the regional labour market training and entrepreneurship support programmes of the National Employment Service and ICATMOR.
7	Make a better use of the process of validation of previous learning and certification of skills acquired in formal and informal environments, to increase the possibility to access formal employment, while also boosting incentives for individuals to pursue further education.

Summary

This recommendation advises that, beyond increasing school participation, the State of Morelos should improve the responsiveness of educational training to the needs of the economy. The Territorial Review addresses how to solidify the vocational training system in tertiary and secondary education levels. The key aspects mentioned are involving more the private sector in the design of programmes, investing in effective counselling and job placement services and promoting entrepreneurial skills from the early ages.

The State of Morelos has progressed in this recommendation. The main changes are the creation of apprenticeship courses on tourism and gastronomy and the creation of youth entrepreneurship centre, together with the organisation of youth business innovation camps. In other areas, however, the situation remained the same, such as support to entrepreneurship for the self-employed and validation of previous learning. Adopting a monitoring and evaluation framework of labour market training programmes is another complex change that could not be advanced.

Detailed analysis

In the second half of 2016, apprenticeship-style education was implemented in the courses of gastronomy and tourism of the Technological University of the South of the State of Morelos (UTSEM). Given that the technical courses teach very practical skills, and that the goal of students is to enter this specific job market of hotels and restaurants, the apprenticeship system is well-suited.

The different stakeholders benefit from participating in this system. For UTSEM, the training offered is hands-on and connected to the needs of the market, which increases the employability of students and the level of satisfaction with the courses offered. Companies can properly train future employees on their production processes and business model. Students can practice their abilities and learn from experience. They are remunerated, which is an important factor to diminish drop-out rates in tertiary education. With companies and UTSEM being partners, a better match between skills taught at

universities and those needed by companies is expected to take place in the sectors of tourism and gastronomy.

This system could be expanded to other sectors. UTSEM is considering the agricultural sector, by partnering up with the State Ministry for Agricultural Development (SEDAGRO). The state should continue dialogue with high education institutions that offer vocational education training (VET). Private VET institutions can use their expertise to help public institutions design programmes, and by doing so identify gaps in terms of the educational offer, to avoid duplication.

High-skill sectors such as ICT, renewable energy and automobile industry merit further consideration. The state could carry out an evaluation of the skills needed by employers in these strategic sectors. New training courses could then be designed, together with representatives of these business sectors. Moreover, the state could play the intermediary role of connecting students looking for internships with companies. The offer of high-skilled employees would support the development of high-skills sectors, generating a virtuous circle of human capital. This could help Morelos move out of the present low skills equilibrium.

On this matter, the involvement of the Council for Human Capital is advisable. The Council is conducting an initial diagnostic of the tertiary education offer and labour market needs in what concerns skills. The Council should also get involved in forecasting skills for the future. They can partner with higher education institutions to conduct such analyses. The aim is to have a roadmap of which skills are important for the State of Morelos in the long-run, and how to promote their acquisition.

The promotion of entrepreneurial skills among the youth is progressing. Albeit integration into the school curricula has proven to be difficult, instruments that do not require such structural change are being promoted. In 2017, the State of Morelos created a youth entrepreneurship centre *(Casa del Emprendedor Poder Joven Morelos).* The centre offers capacitation on entrepreneurial skills, technical assistance to create SMEs, and physical space to develop activities and meet people. Entrepreneurial skills can range from collaborative problem-solving to presentation skills and product development.

Secondly, these non-cognitive social and emotional skills can be taught in different types of activities, such as collective projects, arts ateliers, business camps, sciences fairs, and many others. One state action to be highlighted is the business innovation camp for youth *Campamento Desafío Innova*, organised together with Scotiabank and JA Mexico.[5] Entrepreneurial skills can also be integrated into existing classes, as a teaching method. To illustrate, arts ateliers stimulate creativity, and collective projects foster collaboration and collective problem-solving. For older students, short internship programmes in companies could be interesting, as it occurs in France. After-school programmes tailored to banking and business accounting could be another option.[6]

In other topics, there is little observable change. The National Employment Service (SNE) offers different training courses and certificates to support labour insertion of the self-employed (OECD, 2017, p. 117[1]). The SNE continues to invest in the modality of capacitation for self-employment of the programme *Bécate.* The OECD emphasised in the Territorial Review the need to expand the capacitation offer, ranging from basic computer skills to advanced marketing strategy and online commerce. One strategy that may support the transition from informality is to ask entrepreneurs participating in capacitation of business development to formalise their activities.

Another issue in which progress was hard to assess is skills certification. The OECD had recommended that skills obtained in the informal sector could be revalidated as credit courses in technical education and certified. The regional centres of certification and evaluation of skills in Morelos, accredited by the national council CONOCER, could invest more strongly in this line of action.[7] Obtaining certification from pre-acquired competencies is something that can support workers in transition to the formal sector. For instance, a carpenter could pass a test to validate carpentry skills, which would facilitate the acquisition of a technical degree certificate that would allow applying for jobs in the formal sector.

Lastly, the sub-recommendation on the monitoring framework stresses the importance of evidence-based policy-making. Improving the collection and use of data is the first step to improve policies. More precisely, the state should follow those who complete training and capacitation courses, to analyse the levels of job insertion after graduation. The SNE should monitor the *Bécate* programme more closely, as already suggested (OECD, 2017, p. 119[1]). The ICATMOR and the INEEA should also develop monitoring and evaluation frameworks to assess their capacitation, training and validation programmes. They could discuss methodologies and develop indicators in partnership with COEVAL.

Taking the high road to innovation

Recommendation

3: Improve knowledge creation, diffusion and exploitation	
Sub-recommendations	
8	Supporting the development and emergence of innovative companies by creating structures which can provide legal and business advice for the commercialisation of innovative ideas.
9	Improve access to capital for knowledge-based start-ups. The public administration can help new firms access financial institutions, providing guidance and sharing part of the business risk by providing collateral for credit.
10	Bridging the existing gap between public research facilities and the business sector, by promoting platforms of co-operation between public and private stakeholders.

Summary

This recommendation addresses the challenge of fostering an innovation system. More than generating patent applications and counting with high numbers of researchers, the State of Morelos needs to better connect innovation with the rest of the economy (OECD, 2017, p. 119[1]). This integration would mean that knowledge produced in universities can travel to the market and be used by companies, that companies have enough funds to invest in research, that the different sectors of the economy can incorporate innovation, even if non-technological and incremental, and that the skills of the workforce are put to the best uses.

The Ministry for Innovation, Sciences and Technology has made progress on this recommendation. The main area of progress was to improve the quality of business and legal advice given to companies, which was done by hiring new staff and by making an international agreement with a Dutch start-up incubator. The ministry has given continuity to programmes of seed money and has capacitated business owners and researchers on how to design joint innovative projects and apply for federal funds.

Moving forward, the ministry should make efforts to institutionalise its network and facilitate direct connections between industry and academia. The ministry should also broaden its field of intervention beyond technological innovation, granted that resources and capacity to do so are provided. It should give more support for innovation to happen in organisational structures, production processes, human resource management, marketing strategies and other non-technological areas. Besides manufacturing, the ministry should foster innovation in firms in the services sector, too. There are different sets of policies that can be adopted by the ministry to progress further in this direction.

Detailed analysis

There has been progress in the legal and business advice offered to companies. For one, the Ministry for Innovation changed the professional profile of their staff in order to provide more structured and sound advice to companies. The advice may include product design, certification, branding, patenting, firm creation, accounting, follow-up during project execution, and linkage with research institutions. The ministry reported having routinely assisted around 300 companies and offered paid consultancy services to 10 companies since 2013. Secondly, the Ministry for Innovation signed, on behalf of the Government of Morelos, an agreement with the business incubator High Tech XL in Eindhoven, Netherlands. Within the terms of the agreement, the Dutch company assists start-ups from Morelos to launch new products, both by providing consultancy services and seed money. So far, three start-ups have been benefitted by the agreement. They are placed in a competitive position in the international market. More broadly, this agreement can help to place the State of Morelos in the international map of start-up innovation.

The Ministry for Innovation has not promoted changes in other areas since the last OECD evaluation. It has however given continuity to projects and programmes that go in the right direction, notably regarding access to seed money and links between industry and academia. The two main programmes for seed money are the InnovaTIC and the TecnoCemiTT. Through InnovaTIC, the ministry selects promising projects and meets with investing companies on their behalf. In total, these programmes have assisted in the creation of 32 companies since 2013. The ministry also provides collateral for credit to start-ups via the Programme *Primer Impulso* and proposes candidates for public funding through *Fondo Morelos*. Through TecnoCemiTT, the ministry provides seed money and capacitation for start-up companies to develop innovative products and launch them in the market. TecnoCemiTT, as a business incubator, has supported 5 companies so far.[8]

The link between industry and academia is being fostered by different strategies. The ministry had already signed several collaboration agreements with public research institutions, to foster collaborations with companies. They also resort to their vast database of researchers to match local job offers and hence promote the local job market. Furthermore, they offer capacitation on how to elaborate innovation projects to compete for federal funds. In 2017 they capacitated 59 business owners and 177 researchers to design joint innovation projects. As a result of this capacitation, in the 2018 call for projects of PEI CONACYT, 36 out of the 58 projects presented by Morelos' businesses and research institutions were approved and will receive funding from the federal government.[9] The approval rate went from 55% in 2016 to 62% in 2017 and 2018.

To continue making progress, two important factors can shape the policies of the Ministry for Innovation. One factor is the institutionalisation of the network cultivated by the ministry, to ensure continuity beyond electoral cycles. The other factor refers to the very notion of innovation being promoted by the ministry. By expanding the definition of how innovation can take place, they can diversify projects and support more firms.

The process of linking firms and research institutions has formed a vast network of contacts. Yet this process is dependent on interpersonal relations of the ministry's current staff, which raises concerns about continuity in subsequent administrations. The ministry should invest in a digital platform to connect business needs and research profiles or start a newsletter or mailing list service. The platform could have a section with the curricula and contact information of researchers, and another section for business owners to post job offers or manifest interest in developing partnerships. Researches could access the area and read offers, in addition to receiving e-mails with specific offers.

The activities of the Ministry for Innovation, Sciences and Technology have focussed on technological innovation in the tradable sector. This can be justified by the mission of the ministry, which is to promote these three areas, as their title says. Moreover, it is true that regions with a higher share of the economic activity in the tradable sector are more productive, innovate more, have higher wages and grow faster (OECD, 2016[6]). Still, the ministry needs to expand its view of innovation, to support non-tradable sectors such as services, and to include forms of innovation that are not technological.

It is important to understand and measure innovation in the service sector. It can occur by generating new technologies or incorporating technologies that are already used in the manufacturing sector. For example, the adoption of information and communication technologies in service activities can make services more innovative and productive. Traditional mechanisms used in the manufacturing sector could also work here, among them promoting entrepreneurship, investing in research and development, offering specific assistance to SMEs and linking research centres with firms (Box 2.1).

Box 2.1. Policies to support innovation in the services sector

Support to entrepreneurship can come in the form of **innovation vouchers**. In Barcelona, the FAD-INS programme gives vouchers to SMEs in the sectors of fashion, design and audio-visual to contract external expertise to improve their business. The expertise of other companies or university centres can be used to elaborate a new marketing strategy, more efficient organisational processes or better human resources management. The SMEs can thus generate innovation that is not necessarily attached to high-technology advancement.

One example of public agency working on service sector innovation is *Tekes*, the Finnish Funding Agency for Technology and Innovation. Unlike more traditional innovation agencies, the Finnish one focuses on **workplace development**, through the *Liideri* programme. In particular, the agency helps to develop management practices and forms of working that promote the active utilisation of the skills and competencies of employees. It reflects an emphasis on demand-led and user-driven innovation.

In addition, public authorities can assist businesses in making better use of the skills that their employees already have, with actions such as **leadership centres** and **awards** for workplace innovation. In Australia, for instance, the Centre for Workplace Leadership supports capacity building in leadership and promotes a high-performance work culture. In Europe, the Workplace Innovation Network stimulates awareness and knowledge-sharing of workplace innovation. Awards such as the Australian Training Awards and the Productivity Olympics in the Philippines recognise small and medium enterprises that have achieved best productivity practices.

Sources: OECD/ILO (2017), *Better Use of Skills in the Workplace: What it Matters for Productivity and Local Jobs*, http://dx.doi.org/10.1787/9789264281394-en; (OECD, 2018[7]), *Productivity and Jobs in a Globalised World: How Can All Regions Benefit*, OECD Publishing, Paris, https://doi.org/10.1787/9789264293137-en.

Non-technological, incremental changes can also foster innovation in the service sector, for instance in the organisational structure, human resources management, marketing strategies, service customisation or problem-solving approaches. There are a number of ways to do so, such as by better matching workers to functions or by better organising the service delivery process. Counselling, capacitation, access to seed money, innovation vouchers and other programmes can support entrepreneurship. Leadership centres, workplace development agencies and awards for workplace innovation can support human resources management (Box 2.1). The state ministry would need broader capacity and resources in order to implement similar policies.

To conclude, moving forward the Ministry of Innovation could: support the institutionalisation of networks via the creation of chambers and committees; design a digital platform to allow direct contact between the offer and demand members of the innovation ecosystem; turn the local service sectors (tourism and commerce) into technology demanding sectors; and enhance the linkage between local tech companies and big Mexican companies via risk-sharing mechanisms, as InnovaTIC is doing. In addition, the ministry could experiment with policies to support innovation in the service sector through organisational and management processes which are not necessarily technological. The ministry would benefit from working together with the Human Capital Council to forecast skills for the future.

Strengthening the role of the Human Capital Council

Recommendation

4: Strengthen the role of the Council for Human Capital to promote the upskilling of the labour force and an integrated vision	
Sub-recommendations	
11	Better define the council's mission and operating model. The council should define its role, functions, and tasks, including the mutual goals of the involved stakeholders.
12	The council should work closely with state labour market training agencies to define its priorities.
13	Ensure a more varied composition of sectoral representatives. Officials from the state government and the education sector are currently over-represented to the detriment of business professionals.
14	Adopt a demand-led approach to training content by involving the private sector into the early definition of programmes.
15	The definition of sectoral groups should not preclude cross-fertilisation. Organising sectorial and thematic areas around a matrix may ensure that sectors and thematic areas meet. Working groups of thematic areas should participate in all sectoral activities in order to develop a common vision. For instance, insights from the high-tech working group should inform the activity of working groups in tourism and the agro-industry.
16	The outcome of the council should be measured and evaluated according to agreed targets.

Summary

This recommendation concerns the structure and activities of the Human Capital Council (HCC). First of its kind in Mexico, the council is a regional body created under the leadership of the Secretary for Economy to address issues of human capital development and innovation with a cross-sectoral lens. It gathers representatives of different ministries,

state agencies, academia, business and civil society. The Council is expected to act as a broker between the state and municipalities. It should also connect business interests with labour market agencies, technological universities and schools. The Council is in a privileged position to assess the current situation, forecast skills of the future, form partnerships and support joint programmes.

The Human Capital Council has made notable progress since the last evaluation. The Council better defined its structure, mission and objectives. The Council co-ordinator has a leading role in organising activities and reaching out to partners. The sectorial groups were redefined according to the strategic sectors of Morelos' economy. The groups of Education and Research and Innovation were made transversal. The Council invited the employment agencies SNE and ICATMOR and businessmen from pharmaceutics and automotive sectors to join the discussions. To track progress in the short-term, the Council adopted nine indicators, as set in the strategic plans of the different groups. In all, a good organisational structure has been set, which should enable the Council to operate successfully. It is important that the HCC uses this formal structure as a catapult to reach more tangible results. The structure should not be too rigid as to prevent the Council from acting organically and cross-fertilising ideas. In the long run, the Council should foresee the need for monitoring and evaluation as well as look for independent funding sources.

Detailed analysis

The Council better defined its mission and structure. The initial structure (five working groups and nine sectorial technical groups) segmented activity into silos. Following the OECD advice (2017, p. 149[1]), the Council strategically reselected sectors, with basis on key economic areas for the state economy. The Council is now divided into 6 sectorial technical groups: automotive, renewable energy, tourism, agro-industry, construction and pharmaceutics. Each sectoral group has a strategic plan of action, with two or three short-term objectives, and indicators to monitor progress in meeting those objectives.

Another action taken to promote cross-fertilisation of activities was to design the group of Education as transversal. This means that the strategy of the Education group has to touch upon the needs of all other groups and that the other groups for their part have to engage in promoting the goals of the sector of education, too. The logic is that education policies should be more responsive to the needs of the industry, whereas employers should be more involved in such policies, too.

Following the model of the education group, the group of Research and Innovation was also reclassified as transversal. Indeed, research and Innovation is not a sector per se but a *modus operandis* that can inform the activities of all sectors. Innovation can and should take place in the agroindustry, the automotive, the renewable energy, the pharmaceutical and the tourism sectors, as innovation lies at the heart of competitiveness and productivity growth. All of these sectors strive for new products, or new applications for existing products, as well as better organisational processes and improved production systems.

An organisational change yet to be promoted is to involve the Ministry for Innovation, Science and Technology more closely in the activities of the Council. Given the importance of innovation for all economic areas, a representative of this ministry should partner up with the co-ordinators of each sectorial group. As a consequence, the Council could better align the projects with state-led policies, and good practices carried out by the ministry could be replicated in other sectors of the economy.

With the creation of the sectoral councils of Pharmaceutical, Automotive and Construction, more private-sector representatives have joined the council. The current composition of each of these groups is around 7-9 businessmen, 1 union representative, 1-2 state civil servants and 4-7 representatives of educational institutions. The increased participation of the private sector in these sectorial groups is welcomed. Still, the involvement of SMEs and start-ups remains under-developed. Representatives of small companies tend to be forward-driven and place-attached, hence motivated to engage in local projects.

The Council should strive for a more balanced composition of all sectorial groups, across type of activity, gender and geographical location. Private actors still have little involvement in the sectorial groups other than automotive, pharmaceutical and construction. Tertiary education institutions were more heavily involved than secondary and primary education ones (OECD, 2017, p. 147[1]). Tighter links with employment agencies, civil society and educational institutions of different levels are advisable. Sectorial groups should encourage women's participation by asking institutions to send women as representatives. Regarding the geographical composition, the Council could have remote meetings, to facilitate the participation of stakeholders from small cities and rural areas. It was reported that some virtual meetings were already being conducted. The Council could also seize the momentum in which other meetings or events are taking place in Cuernavaca to hold meetings with actors from other parts of Morelos.

In all, the Council is well-structured and well-equipped to continue its activities. The leading role of the co-ordinator is welcomed. The Co-ordinator can reach out for business professionals to increase participation levels in the Council, as well as support for training and education projects that attend the needs of the market. As the Council expands, another co-ordinator may be necessary. This co-ordinator could assume a different strategic role, for instance, of liaising with municipalities and civil society.

The Council structure should enable it to operate organically. Structure should not mean rigidity; there should be enough room for flexibility and experimentation. The Council should strive to work organically across sectors, while also allowing each sectorial group to advance its own projects. Moving forward in this direction, the Council could: engage "front runners", invest in mutual projects and secure resources.

Front-runners are decision-makers from companies, government and institutes that can assume responsibilities and lead projects in the Council. They can start new partnerships, bring in resources and enhance an overall climate of trust among stakeholders. As indicated in the Territorial Review, the Council need members that are engaged and that can assume the front lead of change (OECD, 2017, p. 147[1]).

Front-runners could launch mutual projects. A diagnostic of common challenges may be carried out by the Council to identify common challenges and objectives, for instance improving labour turnover (OECD, 2017, p. 149[1]). Once stakeholders share needs and interests, they will feel more motivated to act together. By investing time to address common needs, stakeholders could feel more connected to the Council as a whole. A shared sense of ownership and identity would strengthen the HCC as an institution.

Mutual projects could further mobilise a mixed funding structure, to which different stakeholders would contribute (OECD, 2017, p. 150[1]). This could make the Council less dependent from government funds while making projects more responsive to stakeholders' needs. A balanced funding structure could better represent the different stakeholders and ensure the Council's continuity, irrespectively of political changes.

Lastly, once the Council implements more activities, monitoring and evaluation will gain prominence. The different sectoral groups have short-term goals and a strategic plan of how to reach them. The groups also have 9 indicators to measure progress. Indicators refer to job creation, employment rate, skills certification and new programmes, projects and collaboration agreements, as in:

1. Number of graduates from educational institutions of upper and upper secondary education hired for a job;
2. Number of jobs generated for graduates of institutions of higher and upper secondary education.
3. Number of new programs or projects between academia and private sector.
4. Number of new programs or educational plans appropriate to the needs of the productive sector.
5. Number of collaboration agreements concluded with the sectors that are necessary for the fulfilment of the objectives of the Council.
6. Number of new high impact projects that will boost the economy of the sector.
7. Number of specialised training centres (transversal)
8. Number of people benefited by programs.
9. Number of people with skills certification.

There are some difficulties with the way that indicators were established. For one, it is unclear how indicators are distributed among the sectoral groups, or if all groups are expected to measure all indicators. Second, the indicators measure outputs of state policies. Yet the activities of the Council should not be mixed with the activities of the state. There is a difference between the Council contributing to the creation of a new government project and the Council appropriating from this result as an output of their actions. The Council should measure, for instance, how many mutual projects have been created by the members of the Council, or how many new state projects have benefitted from inputs by the Council. It is more nuanced than measuring the numbers of new state programmes *per se.* Furthermore, the sole focus on outputs, while easily measurable, does little to reflect the quality of the programmes implemented. For instance, the number of new educational plans adequate to the business sector does not mean that there is a better matching between skills and jobs. The number of recent graduates hired for a job in their area of expertise would be a more precise indicator. The focus on outputs is good for a short-term evaluation, but in relation to a long-term vision, outcome indicators can function better. In any event, there will be difficulties in establishing causality. For instance, it is hard to attribute a single action adopted by the Council to a higher tertiary education completion rate. Still, it could indicate that the Council is working with institutions to support that endeavour and the objectives of the Council are being met.

The Council should revise the indicators to better reflect the achievements of the Council, including for instance:

- A mix of output and outcome indicators;
- Indicators that can function as proxies for human capital levels, among them the number of graduates hired for a job in their area of expertise, number of people with skills certification and tertiary education completion rates;

- New programmes directly developed by the Council or to which the inputs from the Council have been decisive;
- New partnerships or agreements signed by the members of the Council;

In addition to this short-term planning, the Council needs to develop long-term goals. A long-term vision for the Council would better instruct how projects and funds are defined and allow to plan ahead. The Council should also develop a monitoring framework suited to the long-term goals that will be defined.

Integrated approach to territorial development

Spatial planning

Recommendation

5: Spatial planning requires a better implementation strategy	
Sub-recommendations	
17	Build more accountability into the spatial planning system to reduce discretion in the implementation of policies and ensure the continuity of territorial and urban development plans.
18	Create an independent council, with technical competencies, to assure continuity and effective implementation of long-term spatial planning. This is important to integrate short-term projects into long-term goals. For instance, with regards to urban planning, the council could help the alignment of local projects with the state urban development vision.

Summary

This recommendation refers to the system of land use planning in Morelos. The current system lacks an integrated vision of the territory and of urban development policies; harmonisation with federal laws; replication to municipalities; greater citizen participation; and accountability. These elements are complex and difficult to be developed in the short time period since the last OECD evaluation. In addition, all of them require co-ordinated action with other levels of government.

Bearing that in mind, the State of Morelos made progress in this area. The most significant change was the creation of the State Council for Spatial Planning (*Consejo Estatal de Ordenamiento Territorial* – CEOT) in 2017. This council, which replaces the old CEDU, has a leaner composition and stronger technical competencies. The creation of the Council is welcomed, but citizens and municipalities ought to have more active involvement in it. Building accountability has been limited to publicising documents and decisions in the government's website *Bitacora Ambiental,* which is specific to the environmental dimension of spatial planning. Moreover, and in a more overarching manner, still pending is a solid framework for integrated territorial development.

Detailed analysis

The regulations and programmes are, for their part, divided into two main policy sectors, both under the responsibility of the Ministry for Sustainable Development. One is ecological land management (*ordenamiento ecológico)*, as defined by the Law of Ecological Balance and Environmental Protection of the State of Morelos (LEEPAEM) and corresponding regulations. The diagnostic and the programmatic elements are

detailed in the Regional Ecological Land Management Programme (POEREM). Different fields of intervention have their own programmes. For instance, the PROAIRE is the Management Programme for Improved Air Quality in Morelos (2018-27). Waste management is covered in the Solid Waste and Special Handling Plan. Water provision and maintenance of watersheds are predicted in the Waste Water Programme (2014-18). The issue of how to ensure continuity of ecological land management plans and programmes is addressed in the recommendation on sustainable development.

The second policy sector is spatial planning (*ordenamiento territorial)*, as established by the General Law on Human Settlements, Territorial Planning and Urban Development (LGAHOTDU).[10] This federal Law, enacted in 2016, has to be harmonised into Morelos' legal framework. The state government had until 28 November 2017, to do so, according to the transitory article 3 of the General Law. Morelos intends to carry out the harmonisation in three stages: elaboration and approval of a new Law of Territorial Planning and Urban Development (LOTDUSEM), enactment of the corresponding set of rules (*reglamento*) and capacity-building of civil servants. The current LOTDUSEM dates from 2009 and is per consequent not aligned with the new legal framework established in the 2016 General Law. The harmonisation would allow for stronger state intervention and control in the matters of spatial planning and territorial development, reducing discretion and opacity.

The programmatic side of this policy sector will be addressed in the State Programme for Urban Development and Land Use Planning (PEOTyDUSEM). The current version of the programme refers to the period of 2007-12 and is thus outdated. A new version is being elaborated by the government. Public consultation forums were organised in December of 2017, during which citizens could receive information about the planning process and give inputs to the definition of the programme.[11] Information was also made available online.[12]

Citizen participation could strengthen the accountability of Morelos' planning system. Besides public consultation forums, which are sporadic, the State of Morelos could consider the creation of a permanent body to give input to territorial development issues (OECD, 2017, p. 182[1]). A Citizens' Council with technical and academic representation could ask for clarifications, offer recommendations and monitor the development of the new land use planning framework, to be harmonised with the General Law LGAHOTDU. The example of Guadalajara can be illustrative in this sense (Box 2.2).

Another measure to improve accountability is the publication of documents, regulations and decisions. The Ministry for Sustainable Development has been publishing some projects and reporting violations in the website *Bitacora Ambiental,* only in the field of ecological land management. Data on budget, personnel and administrative procedures such as call for tenders are published directly in the state website *Transparencia Morelos*.[13] Data requests should be treated within reasonable delays, following the same protocol of the Mexican federal *Law of Access to Public Information*.[14]

To assist on land use planning matters, the State Council for Spatial Planning (CEOT) was created in 2017. As defined by the LOTyDUSEM, this state body is composed of representatives from the state government, metropolitan council, associations of architects and urbanists, of the construction sector and municipalities. The attributions of the CEOT are to advise the competent authorities in the planning process of land use planning and sustainable urban development, to support the elaboration and implementation of the PEOTyDUSEM, and to serve as a channel for citizens' proposals and comments. It is

important that the CEOT has sufficient personnel to conduct activities and ensure that spatial planning is conducted according to the laws and guidelines.

The CEOT counts with a sub-technical committee to provide technical and legal support to its activities, which is a new institutional arrangement in Morelos. The CEOT replaced the State Council for Urban Development (CEDU), which did not count with such structure. The explanatory statement of the LOTyDUSEM affirms that the CEDU had trouble being operational, lacking a more specialised body to conduct studies and carry out technical tasks.[15] As per the document of creation of the CEOT, the structure, composition and operational rules of the sub-technical committee remain to be defined.

To conclude the point of continuity, it is difficult to ensure continuity in a system that is in itself fragmented, short-sighted and divided into silos. To put it simply, Morelos does not have an integrated territorial development strategy, which is not only the state's fault, as the state has to follow the national system. In point of fact, the strategic objectives are renewed every six years, with the enactment of a new Development Plan. The two main policy sectors remain largely sectorial: ecological land management deals with the environmental side of planning (protection of natural areas, pollution, waste, water treatment, etc.), while spatial planning concerns urban zones and human settlements. None of these two systems can substitute for a comprehensive policy of sustainable regional-territorial development.

Another aspect of continuity regards rule of law. The spatial planning system has to be implemented, monitored and evaluated. The state can have all the different plans and programmes, but it they are not followed continuity cannot be ensured. The state, particularly the Ministry for Sustainable Development, has insufficient staff to perform this task. Personnel is needed to conduct studies, elaborate plans, approve projects, supervise building codes and enforce regulations.

Furthermore, the system has to be harmonised by municipalities. Municipalities often lack financial and technical resources to update and implement plans. The state should incentivise municipalities to plan for urban development (OECD, 2017, p. 182[1]). Under the subsidiarity principle, the state could do the plans of some municipalities if sufficient personnel are made available. Alternatively, the state could provide technical and financial assistance to municipalities in producing an urban development plan, but again, in this case, more staff is needed. The state could require urban development plans to be periodically updated and approved as a condition for municipalities to apply for grants and assistance.

Metropolitan policy-making and implementation

Recommendation

6: Urban policies should design and implement policies at the metropolitan scale	
Sub-recommendations	
19	The governance of metropolitan areas in the State of Morelos relies on a large number of actors. The State Ministry for Mobility and Transport should be integrated into the co-ordinating agency of the metropolitan areas to ensure policies tackle metropolitan-wide challenges in a harmonised way.
20	The Metropolitan Fund should respond to a comprehensive urban development plan that prioritises the needs of the broader metropolitan areas.

Summary

This recommendation refers to metropolitan policy-making and implementation. The co-ordinating agency of metropolitan areas is the Council for Metropolitan Development (CDM in Spanish). There is no metropolitan level of government as such in Mexico; the CDM is a state agency whose function is co-ordinating with the municipalities of the metropolitan area. Metropolitan areas are defined by population agglomeration levels of adjacent municipalities. In Morelos, the two metropolitan areas recognised by the national statistics office INEGI are Cuernavaca and Cuautla. The CDM of each one manages the allocation of resources from the federal Metropolitan Fund.

This recommendation instructs that metropolitan spatial planning is needed to back up the actions of the Council and the allocation of federal funds. Morelos should promote an integrated vision of metropolitan planning, and one that aligns land use governance and transportation development, based on a coherent view of the metropolitan territory. A metropolis is more than the sum of the municipalities that are part of it.

The State of Morelos has made progress in this area. On the positive side, the State Ministry for Mobility and Transport was included as a permanent member of the CDM. It is yet to be seen how the state ministry will be able to integrate its views and make its voice heard in the Council. A comprehensive urban development has not been adopted. Understandably, the elaboration of such plan would require long-term, structural changes that go beyond the timeframe of the Review. Still, this means that the Council lacks a long-term, integrated view of metropolitan development, and often allocates funds in a fragmentary manner, without a clear metropolitan dimension.

Detailed analysis

Metropolitan governance in Cuernavaca and Cuautla is co-ordinated by the correspondent Council for Metropolitan Development. The CDM is a decentralised state agency with three internal divisions. The main Council, whose president is the governor, has the attribution to define the objectives, priorities and strategies for metropolitan development. The council has to ensure that these are aligned with the National Development Programme (PND) and with Morelos' development programmes. The Technical Committee is in charge of allocating resources from the federal Metropolitan Fund to municipal or inter-municipal projects. It is presided by the Ministry of the Treasury, with representatives of state ministries and municipalities. The projects chosen have to reflect the priorities defined by the Council and contain a real metropolitan dimension. The technical sub-committee is responsible for the studies that support the decisions of the technical committee.

Since the last evaluation, the state Ministry for Transport and Mobility was made a permanent member of the Technical Committee of the Council for Metropolitan Development of Cuernavaca. The ministry representative will get to deliberate on which projects to be funded. Continuing the activities of the Council, it is expected that the ministry assumes an active role in the committee and disseminates its view of metropolitan mobility into funding allocation decisions. It is fundamental that land use planning and transportation investments are aligned.

The two Councils for Metropolitan Development have funded projects in a piecemeal, fragmentary manner. Examples are infrastructure projects in one municipality, e.g. bridge construction or waste management plant. Even though these projects may improve the quality of the urban environment, it is less clear if they have a metropolitan dimension.

In addressing this matter, the Councils have to follow the guidelines of operation of the Metropolitan Fund, issued by the federal government in January 2018. The guidelines instruct that funds should be allocated to infrastructure projects that contribute to territorial development and have metropolitan interest, or to *ex ante* cost-benefit studies on the viability of regional and urban infrastructure projects.

One way to verify whether there is metropolitan interest is to analyse if the infrastructure project affects more than one municipality, or if it involves an issue that has to be addressed at the metropolitan scale. For instance, retaking the example of bridge construction, if the bridge connects two municipalities or is used for inter-municipal circulation, then the project would have metropolitan interest. The waste management plan of the previous example may be the object of a consortium between two municipalities. Another example is reducing air pollution: once pollutants travel across administrative borders, any project would have to involve more than one municipality.

For the funding process to become more coherent, it should be supported by a longer-term, integrated metropolitan development plan. It is not sufficient that the decisions are justified by an array of planning instruments (Cenecorta and Carroll, 2014, p. 15[8]). The State of Morelos should develop metropolitan plans for the zones of Cuernavaca and Cuautla. The plans should concern issues of territorial development, land use planning and environmental management. They should have a long-term vision for development, with corresponding objectives and target areas. With such planning instrument, the CDM could allocate funds to projects that have a clear metropolitan interest. It may be the case that different small projects have to be considered together to fulfil this broader interest.

Conurbation areas have land use plans, but conurbation areas and metropolitan areas do not correspond to the same territory. The metropolitan area of Cuernavaca, for instance, is larger than the conurbation of Cuernavaca and comprises a municipality in a different state (Ocuilan, State of Mexico). For this reason, metropolitan development plans should be broader than the existing conurbation land use plans. Furthermore, metropolitan plans should define objectives and long-term goals, establish a vision for the territory, and have a comprehensive environmental management strategy, that in addition to spatial planning.

Another issue is that federal and civil society actors should be more strongly involved in Metropolitan Councils. Research carried out across Mexican metropolitan zones found that decisions of the different Metropolitan Councils reflect the priorities of state actors, with little participation of civil society stakeholders and representatives of the federal government (Cenecorta and Carroll, 2014, p. 76[8]). For the Councils to become more effective and legitimate governance bodies, they should involve the different actors that have interest in metropolitan issues (Cenecorta and Carroll, 2014, p. 79[8]).

In addition, the state could consider creating a Metropolitan Planning Institute in Cuernavaca, in charge of developing the concept behind the metropolitan area, drafting metropolitan plans, promoting participatory planning, and processing geographical information and data. It should represent the metropolitan area in spatial planning matters, and it should be funded by all municipalities in the metro area and the state. The model of the IMEPLAN in Guadalajara, Mexico is interesting (Box 2.2).

To illustrate, in Guadalajara the metropolitan planning system is composed of three bodies – technical, social and political (Box 2.2). The technical body is responsible for the elaboration of a metropolitan development programme, a metropolitan land use plan, and the map of metropolitan risks. It is part of a broader governance system whose political body is the Metropolitan Co-ordination Board, an inter-municipal collegial

organ. The Guadalajara system of metropolitan governance is further reported to count with the active involvement of civil society groups and NGOs, which includes but is not limited to participation via the Metropolitan Citizen Council (GIZ/UN-Habitat, 2015, p. 48[9]).

Box 2.2. The Governance Tripod of Guadalajara Metropolitan Area

Guadalajara Metropolitan Area has a long history of metropolitan governance. In the 1990s, its main political body was the Council for Metropolitan Development, and the main regulation was the 1976 General Law for Human Settlements. Since then, the system has become more open and horizontal. As of today, the system embraces a broad range of stakeholders and comprehensive planning instruments.

The political body of the governance system is the GMA Metropolitan Co-ordination Board. Created in December 2012, it is an inter-municipal collegial organ for political co-ordination. The members are the Mayors of the municipalities that constitute the GMA and the Governor of the State of Jalisco. Among the objectives of the MCB is to set the Metropolitan Agenda, which is the instrument that establishes priorities, objectives, strategies and actions for the metropolitan area.

The Metropolitan Planning Institute (IMEPLAN), operational since July 2014, is the technical organ of the metropolitan co-ordination system. It is an inter-municipal decentralised agency with legal personality and own assets. Its main objective is to develop and propose to the Board the technical instruments for the metropolitan planning, to do research and studies, and to propose alternative co-ordination mechanisms within the system. The main structural tools designed and developed by IMEPLAN are: The Metropolitan Development Program; the Metropolitan Land Use Plan and the Map of Metropolitan Risks.

The Metropolitan Citizen Council is an inter-municipal advisory organ for citizen participation. The honorific membership can be held by grassroots leaders, representatives of non-governmental and professional organisations, scholars, researchers, or private sector leaders. Every metropolitan municipality has up to three seats to appoint to the Council, and members are elected by a public and open call among civil society. The objective of this entity is to be a mechanism of monitoring and follow-up of metropolitan matters and to report citizen complaints. In addition, the MCC can organise, receive, discuss, and channel proposals from civil society regarding the metropolitan co-ordination system.

The metropolitan co-ordination system is based on co-operation and collaboration. After decades of slow concrete implementation and few successes in sectorial inter-municipality arrangements, the GMA is paving the way as an example – if not an inspiration – at the national level. Its laws, institutions and stakeholders are maturing to collaborate within formal frameworks defining a 25 years vision, together with tools for implementation.

Source: GIZ/UN-Habitat (2015), *Case Study: Metropolitan Governance, Guadalajara Metropolitan Area, Mexico*, https://unhabitat.org/case-study-metropolitan-governance-guadalajara-metropolitan-area-mexico/.

Rural policy and tourism

Recommendation

7: Rural policy must go beyond agriculture and develop further synergies with the tourism sector	
Sub-recommendations	
21	Adopt a multi-dimensional territorial approach to rural areas, which goes beyond the agricultural sector and looks at opportunities for other sectors of the rural economy to develop and contribute to growth. For instance, the natural and agricultural landscape can be integrated into agro-tourism activities. It is important that the policy content is open to the contribution of all involved stakeholders, avoiding a top-down type of approach. Finally, financial resources should be channelled towards productive investment projects rather than compensate for lost income.
22	Develop tourism policies in accordance with environmental preservation, but first and foremost complementary to other policy areas.
23	Elaborate and deliver appropriate training to upskill workers in the tourism sector. Develop support for tourism entrepreneurship.

Summary

The OECD recommended the State of Morelos to invest in a multi-dimensional territorial approach to tourism. It means investing in several dimensions of the economy, such as infrastructure, service provision, business development, environmental protection and education for skills. Moreover, it requires looking at the potentialities of the State of Morelos, such as its pleasant climate, rich biodiversity, and a good offer of hotels and restaurants. Lastly, it refers to bringing different stakeholders to the table, including business owners, educational institutions, indigenous communities and municipalities, in order to develop a shared vision and establish common objectives for development.

The State of Morelos has made significant progress in this area. New routes of rural tourism are being developed, around premium products such as rice and avocado. Training courses in the fields of tourism and agriculture are being offered, and certificates of quality are being awarded. The eco-tourism programme of Indigenous villages, called *Magical Towns* programme, is getting international recognition and attracting visitors to the area. The brand *Orgullo Morelos* has been expanding and consolidating itself. Still, there is room for progress, and some suggestions in this direction are provided below.

Detailed analysis

The OECD had recommended the State of Morelos to invest in rural tourism. One of the strategies adopted by the Ministry for Tourism is the development of touristic routes. The route of the convents was already in place, but the historical buildings were significantly damaged during the 19 September earthquake. For the route to become operational again, these buildings need to be restored. Other routes are being developed, in relation to key agricultural products of the region: rice, avocado and goat cheese. These routes still have to be planned in more detail and implemented. One tool that could assist in this task is the Strategic Plan for Rural Tourism, also in preparation by the Ministry for Tourism as of the first quarter of 2018.

The development of touristic routes should be articulated with other policy dimensions. For instance, there should be a sufficient offer of hotels and amenities along the routes, as well as adequate road infrastructure. Local farmers should receive support to continue

producing high-quality produce and to obtain certifications such as of organic production and sustainable farming practices. Food exports should be developed. The rice produced in Morelos, for instance, has received international awards and has the potential to reach broader international markets, e.g. the Asian one. The routes could also be combined with strategies to promote the local gastronomy, such as fairs and other events but also training and capacitation courses.

Another strategy to promote rural tourism is the federal programme *Magical Towns (Pueblos Mágicos*), to which Morelos is affiliated. The participating towns are Tepoztlán and Tlayacapan. This programme revalorises traditional heritage and indigenous cultures to promote sustainable tourism practices, thereby contributing to the long-term development of local communities. The State of Morelos won the international prize for Best Active Tourism Product in the 2017 edition of the International Tourism Trade Fair, in Madrid for the Tepoztlán Magical Town.[16] The prize recognises the unique value of the 18 different cultural experiences offered under this programme, among them cycling routes, visit to convents, gastronomic experiences and hiking trails. In the 2017 edition of the National Fair of Magical Towns, a chef from Morelos won the prize of Traditional Gastronomy. This signals the potential of investing in Morelos' traditional gastronomy.

Given the importance of professionalising the tourism sector in Morelos, the OECD had recommended renewed focus on training and capacitation. There have been considerable advances in this field. In 2017, 40 touristic establishments received training on Sustainable Tourism Practices and are in the process of being awarded the sustainability certificate (*Distintivo S*). Under the Programme of Capacitation and Touristic Competitiveness, 62 training courses were offered. Five companies were awarded the certificate of touristic competitiveness M*oderniza Ecoturístico.* The ministry plans to qualify 14 hotels and restaurants to obtain the certificate *Tesoros de México,* which is granted to touristic establishments that both promote the Mexican culture and offer a high standard of service excellence.

Moving forward, the Ministry for Tourism should continue to provide capacitation to workers and business owners and assist companies in obtaining certificates of excellence. The ministry should continue to work together with the Council of Human Capital in that endeavour and moving forward to identify tourism trends. Capacitation should also concern high-skilled activities, such as high-end gastronomy and language courses.

Investing in eco-tourism can be a strategy to attract diverse profiles of visitors, and for longer periods of time, as the example of Costa Rica indicates. Morelos has a year-round pleasant climate and many natural areas, including mountains and parks, which are conducive to hiking, trekking and cycling activities. The success of the Magical Towns programme signals the interest in cultural experiences related to indigenous cultures, too. Local communities should be directly involved in the promotion of eco-tourism.

The state is working to establish Economic Areas of Environmental Value (*Unidades Económicas de Valor Ambiental*, UEVA). Some areas which are currently defined as areas of environmental management (*Unidades de Manejo Ambiental)* will be reclassified as UEVAs. This change will allow the development of local economic activities in areas of high environmental value. Instead of a complete separation between natural areas and human activities, the UEVAs will contain a mix of activities, but at a scale that respects the ultimate goal of environmental preservation.

This change could benefit local communities, by allowing them to engage in productive activities. For that to happen, the state should support residents to become entrepreneurs,

by providing training and capacitation. The state could also invest in a model of shared management of natural resources, in which the responsibility is divided between the environmental agency and representatives of local communities. Alternatively, the state could invest in a participatory model that engages local stakeholders in defining the uses of the territory and the desirable future activities. In addition, the impacts of new economic activities on the environment should be assessed *ex ante*.

Towards a territorial approach to tourism policy, the State of Morelos should work more closely with municipalities (OECD, 2017, p. 209[1]). Considering that different municipalities have different characteristics and potentials, they could provide different tourism attractions, in a complementary fashion. The logic here is to reinforce the potential of different areas in a harmonised way and avoid duplication of strategies.

Furthermore, and more generally speaking, the state should support entrepreneurship. This refers to different forms of assistance to business creation, including legal advice, facilitated bureaucratic procedures, information about licensing and regulation, assistance to design brands and marketing strategies, organisation of events to strengthen local networks, and facilitated access to credit. Support for business development in communities within the newly designated Economic Areas of Environmental Value and the Magical Towns should also be fostered.

The state should give special support to activities that can foster a local brand. The *Orgullo Morelos* brand was created with the goal of strengthening the value chain in Morelos. The programme helps products made in Morelos to reach the shelves of big supermarkets. It negotiates large distribution contracts that individual producers would lack sufficient scale to do so on their own. It also assists businesses with product design, branding and packaging.

The brand *Orgullo Morelos,* to become easily recognisable by consumers, has to invest in a distinctive view of the territory. The products should be related to characteristics of the State of Morelos, be its culture, gastronomy or natural assets. They should be artisanal or fabricated at small scale, so the place of production gains distinctiveness. Furthermore, local forums and public deliberation mechanisms should be promoted, in order to engage local stakeholders in brand-making and create a sense of shared ownership and local pride. The cases of the regional brand *Produit en Bretagne* in France and *Cinque Terre* in Italy could be a reference for the consolidation of the *Orgullo Morelos* brand (Box 2.3).

A territorial development approach to tourism and rural policy has yet to consider issues of infrastructure and service provision. Namely, better road infrastructure and broader networks of public transportation would increase the internal connectivity of Morelos. Touristic routes, regional products, natural areas, and the offer of hotel and restaurants will have limited impacts on tourism flows if visitors cannot easily reach these locations and travel around them. As Recommendation 8 instructs, improved internal connectivity should be a state priority. Enhanced connectivity would also contribute to a more distributed pattern of touristic activities, which today tend to concentrate in Cuernavaca and in the Magical Towns. It would also give a stimulus for visitors to stay longer periods, differently than the current pattern of short stays.

Box 2.3. Territorial branding

Territorial branding, when well-articulated and well-promoted, is an effective strategy for regional development. Places have their own characteristics, products and people, i.e. economic, geographic and cultural attributes that can be identified as unique or special. Branding is a way to promote the uniqueness of places. A clearly identifiable brand is more beneficial than many different, segmented ones. Brand creation needs follow-up action to consolidate it. The literature has extensively noted that logos and slogans alone have little significance in fostering economic restructuring and social cohesion (Oliveira, 2015[10]). Places should follow up on actions that can transform the region, in order to make the potential of the brand realised. A brand reflects the good work behind it; it does not create great places of its own.

The case of the brand *Produit en Bretagne* (Made in Brittany) in France shows how shared values and collective efforts to expand and solidify the brand can yield positive results (Donner, 2016[11]). The oldest regional food brand in Europe, *Produit en Bretagne* was created in 1986 to strengthen the solidarity and employment of the region. Since then, an association of producers was created, which includes today members of the service sector such as hotel, restaurants and cultural and creative sectors. The association facilitates the engagement of an array of stakeholders, who exercise quality controls over products and agree on the marketing strategy. The association successfully created a business incubator to support innovative projects, too (Donner, 2016[11]).

This example also signals the importance of participatory territorial branding, i.e. of involving local stakeholders in brand development and consolidation. Promoting synergies and consensus among regional stakeholders has been identified as one of the key elements in keeping a brand alive and well in the long run.

The territorial marketing strategy adopted in the Cinque Terre region of Italy, for instance, relied on participatory methods. Local Agenda 21 forums were used to foster the commitment of the local and entrepreneurial actors in agricultural and tourism activities related to the promotion of the brand (Lorenzini, 2011[12]). In the long run, a long-lasting and legitimate brand depends largely on the engagement of local stakeholders.

Sources: (Donner, 2016[11]), *Understanding Place Brands as Collective and Territorial Development Processes*, Wageningen University, Montpellier SupAgro, http://dx.doi.org/10.18174/379598; (Lorenzini, 2011[12]), *Territory branding as a strategy for rural development: experiences from Italy*, http://hdl.handle.net/10419/120139; (Oliveira, 2015[10]), "Place branding in strategic spatial planning: A content analysis of development plans, strategic initiatives and policy documents for Portugal 2014-2020", *Journal of Place Management and Development*, Vol. 8/2, pp. 23-50, https://doi.org/10.1108/JPMD-12-2014-0031; adapted from: (OECD, 2018[7]), *Productivity and Jobs in a Globalised World: How Can All Regions Benefit?*, OECD Publishing, Paris, https://doi.org/10.1787/9789264293137-en.

Service provision should attend both local residents and tourists. Besides health, public transportation and education, one service that merits consideration for an integrated rural policy is broadband connectivity. Businesses need a fast and reliable connection to run online commerce, process payments and orders and stay competitive in an increasingly digital economy. Making broadband accessible in areas with low population densities and for disadvantaged groups is a challenge but it the benefits are numerous (OECD, 2018[13]). It can increase productivity in an existing industry, such as agriculture, or attract

individuals and new firms to locate in a small town or rural region, bringing employment opportunities. Start-up firms can invest in innovative production processes and more easily connect with service providers and clients. Anchor institutions, such as schools and hospitals, can better manage information systems. Social networks can promote local brands and facilitate access to information by tourists. Media and digital platforms can communicate about service provision and tourism activities. In all, assisting rural and remote communities to improve broadband access is critical to economic and social development (OECD, 2018[13]).

In summary, the State of Morelos should:

- Consolidate capacitation and training programmes for tourism and gastronomy: with special emphasis to eco-tourism, organic agriculture, traditional cuisine and sustainable tourism practices, further striking a balance between expanded offer and quality of certifications.
- Involve the Human Capital Council in the elaboration of capacitation and training programmes.
- Enact and implement the Strategic Plan for Rural Tourism.
- Develop an action plan for the routes of avocado, rice and goat cheese, giving consideration to associated hotels and restaurants, road infrastructure, broadband coverage, and enhanced quality of agricultural produce.
- Elaborate strategies to promote food exports and reach international markets, in relation to the touristic routes abovementioned.
- Restore the convents which are part of the heritage of the route of convents.
- Consolidate the Economic Areas of Environmental Value (UEVA), after diagnostic is complete.
- Support sustainable economic activities developed by local communities within the newly-consolidated UEVAs. These activities should aim at generating wealth for the local communities, promoting their collective well-being and preserving the environment.
- Continue supporting local gastronomy: It should promote traditional ingredients; organise culinary events; capacitate chefs; help restaurants obtain certificates of excellence and cultural representativeness, such as the Mexican Treasures; and promote Morelos' products and chefs in international fairs.
- Consolidate the *Orgullo Morelos* brand.
- Support entrepreneurship: Offer legal advice to business formation; facilitate bureaucratic procedures; clearly inform about licensing; invest in programmes that support marketing and brand development; train eco-tourism guides.
- Improve road infrastructure.
- Invest in broadband connectivity in rural and remote areas.

Connectivity and mobility

Recommendation

8: Accessibility of the region should strengthen both a. connections to external markets in neighbouring states and export and b. internal connectivity	
Sub-recommendations	
24	Investments in railroad and road networks should continue to improve the accessibility of the region to Mexico City, neighbouring states of Puebla, State of Mexico and Guerrero and to external markets in the Pacific and Atlantic coasts.
25	Improve urban mobility while taking into account the environmental dimension.
26	Strengthen internal connectivity by better connecting marginalised municipalities. These initiatives should be integrated and aligned with policies improving education and capacity at the municipal level.

Summary

This recommendation stresses the importance of infrastructure investments to capitalise on Morelos' strategic location, close to Mexico City and on the routes to the Atlantic and Pacific Coasts. Infrastructure investments can bring three sets of benefits: improved mobility for state residents; better connectivity with the neighbouring states of Puebla, Mexico and Guerrero; and more accessibility to external markets via the coasts.

The recommendation should be understood in light of a broader policy framework. Infrastructure investments alone cannot make up for integrated economic development. Solid investments in human capital and innovation should be promoted, too (see section about Human Capital and Skills). The gains brought by infrastructure investments generate higher productivity growth if these two pillars are also enhanced (OECD, 2016[6]).

The State of Morelos has made progress in this area. The connectivity with Mexico City and to the coasts has particularly advanced, with the construction of the Highway XXI Century and the project of the railroad station in Cuautla. The goal of sustainable urban mobility received considerable attention from the government in the past year, and several different items were advanced. The internal connectivity of the State of Morelos, including rural areas and marginalised municipalities, was impaired by the earthquake damages, but still improved a little.

Detailed analysis

The issue of external connectivity is progressing considerably. Firstly, the inauguration of the Highway XXI Century, under construction since 2014, is expected for 2018. The highway will better connect Morelos to Puebla and international markets, via Acapulco to the Pacific and Veracruz to the Atlantic. The highway will reduce the cost and time of displacements between the Gulf and the Pacific. As these links move forward, Morelos should consider a joint initiative with Puebla and Guerrero to improve connectivity with the port of Lazaro Cadenas (OECD, 2017, p. 198[1]). This project could be important to approximate the economies of Morelos and its neighbouring states, as well as to improve the access to external markets, given that there is no commercial port in Acapulco.

Secondly, the project of reactivation of the railway station in Cuautla aims at improved transportation of goods and materials across the state. The project comprises the construction of a multimodal loading station in Cuautla and the rehabilitation of 103km of railroad, linking Cuautla to Chalco/La Paz, in the southeast of the Mexico City conurbation. The State of Morelos is building the station, and the railroad is being rehabilitated by the concessionaire Ferrosur. The agreement signed between Ferrosur and Morelos comprises a risk-sharing mechanism by which the state pays for the reconstruction, and Ferrosur pays back the state after a viability cap is reached. The cap was identified after a diagnostic study carried out by the Ministry for Economy. This issue is analysed in more detail in Chapter 4.

The issue of urban mobility is being addressed by the state. Among the changes promoted are the revision of the air quality programme PROAIRE, the creation of the council for territorial development CEOT, the enactment of Cuernavaca's green zone, and conversion of taxis to natural gas. As much as these changes are welcome, the state needs to promote broader, more overarching actions in order to advance the topic of sustainable urban mobility in a more systematic, coherent way.

One organisational change was the creation of the State Council for Land Use Planning (CEOT), which has attribution to oversee urban planning issues, included mobility and sustainable development (see section about Spatial Planning). The Council can work with metropolitan areas to suggest mechanisms for spatial planning. As a technical advisory board, the Council can propose zoning, fiscal and legal instruments that could, among other functions, control growth, reduce pollution and preserve the environment. The Council should have a closer role in capacitating municipalities and assisting them in the development of ecological plans, as to include the dimension of sustainable urban mobility.

One legal change is the revision of the Management Programme for Improved Air Quality in Morelos (2018-27), the PROAIRE programme. The programme's objective is to reduce and control polluting emissions and to promote the state capacity to do so. The programme identifies the need to develop and render public an Air Quality Index and to create an Atmospheric Environmental Contingency Plan. It also provides indications on how to improve the inventory of Pollutant Emissions to the Atmosphere. For the programme to be implemented, it is necessary to train the current personnel and hire specialists in the field of air quality (Morelos, 2018, p. 52[14]). The PROAIRE programme also indicates that municipalities should enact statutes regarding air quality and add this dimension in existing regulations of related policy areas.

With the creation of the green zone (*ecozona*) in Cuernavaca in 2015, the state has continuously invested in projects to turn downtown Cuernavaca into a low-emission zone. The projects range from mobility to environment to urban planning. State actions include a diagnostic of individual exposure to air pollutants, the creation of pedestrian zones, the requalification of historic buildings and sites, a partnership with the Policy Institute for Transport Development (ITDP) to promote cycling and others.

Under the framework of the green zone, some areas of downtown Cuernavaca have become exclusive for pedestrian traffic. This change was promoted after a viability study that signalled that 1) the fact that some streets are closed will not significantly impair automotive traffic and 2) residents of Cuernavaca are willing to walk regularly, and already do so for distances up to 1 km. The state could designate which streets serve which uses in the green zone, e.g. street commerce, residential, government offices. In addition, the state should continue investing in the quality of public spaces. Some actions

needed are sidewalk maintenance, better signalling of pedestrian crossing, more street lighting, and adequate urban furniture.

The state partnered with SEMANART and the Megalopolis of Mexico to convert taxis to natural gas. With 3 000 taxis having participated, this programme can contribute to reducing air contamination in Morelos. It does not, however, replace the need for a sustainable public transportation model, since taxis are a public-like service that can improve mobility at the micro-transit level. Multi-modal strategies that comprise walking, cycling and collective transportation still need to be further advanced in the state.

In Cuernavaca, for instance, since the Bus Rapid Transit project *Morebus* was cancelled in 2017, another solution for public transportation needs to be developed. A diagnostic study should be carried out to identify needs and possible solutions. Non-car users need a reliable, sustainable transportation network. The Integral Plan for Sustainable Mobility of Cuernavaca Metropolitan Zone, enacted in 2016, can provide the basis for such model to be promoted (Morelos, 2018, p. 31[14]).

Lastly, since the earthquake impaired road conditions, internal connectivity has improved little in the state. The state launched a programme for rehabilitation of roads and streets damaged by the earthquake of 19 September (Fonden Carretero – 2017). Under this programme, 25 roads and 7 urban avenues are being rehabilitated in 12 municipalities. In addition, Morelos is implementing the State Road Plan (*Plan Carretero Estatal*), with the objective of paving dirt roads. An investment of approximately USD 15 000 is being made in a total of 51 km, distributed in 7 different roads, which will bring direct benefits to 20 municipalities. The percentage of paved roads in good conditions went up from 48% to 52% since the last evaluation. In the long-term, the state should continue pursuing an increase in the percentage of paved roads. Improved internal connectivity should become a state priority and be accounted for in the State Programme for Land Use Planning (PEOT) and in the Development Plans of municipalities.

By enhancing transport links and easing commuting, Morelos may have a more efficient, less costly business environment. The benefits to the state economy are obvious: with the improved circulation of people, goods and materials, economic activity is stimulated. However, improved internal connectivity may bring the unintended effect of firms and workers exiting the state. To avoid this risk of "leaking by linking", infrastructural investments need to be pursued along with policies to foster human capital, promote innovation and enhance quality of life in the state (OECD, 2012[15]).

Sustainable development

Recommendation

	9: Preserving the environment by co-ordinating and implementing policies to mitigate climate change
	Sub-recommendations
27	Design and implement a comprehensive plan for environmental protection, which includes greenhouse gas emissions, waste management, and quality of water.
28	Foster the connection of state programmes to national and international environmental programmes, such as the Climate and Clean Air Coalition (CCAC).
29	Promote the substitution of fossil combustion with gas for public transportation, exploiting the newly constructed gas pipeline and national programmes fostered by SEMARNAT.

Summary

This recommendation addresses the issue of sustainable development under three aspects: comprehensive planning; co-ordination at national and international levels; and non-fossil fuelled transportation. These aspects suggest important directions but the state strategy for sustainable development is broader than that. The aspect of renewable energy, for instance, is addressed in the Territorial Review but not comprised here in the Review. Moreover, the fact that the recommendation is directed to the Ministry for Sustainable Development should not preclude sustainable development of being addressed by the different state ministries. That is, sustainable development is an objective shared amongst different policy sectors, from transportation to housing, tourism and agriculture.

The State of Morelos made modest progress in this implementing this recommendation. For one, implementation requires medium- and long-term actions, which the short-term period of the Review could not fully grasp. One good indication is that the state is revising and promoting different planning instruments, such as the PEGROTM, the PEOTyDUSEM and the PROAIRE. They will have to be aligned with the state law for ecological protection (LEEPAEM) and the correspondent programme for ecological land management (POEREM). On non-fossil fuelled transportation, the state supported the conversion of 3 000 taxis to natural gas, in partnership with SEMANART and the Mexico City Megalopolis. This action aligns with the OECD recommendation. The following step should be the transition to natural gas in public transportation modes such as buses and micro-buses. Lastly, the aspect of outreach and partnerships has seen modest advance. Continuation of existing projects seems to have prevailed over new partnerships, which is advisable in the short-term. In the long-term, the state could envision more strategic engagement, in alignment with the federal government's actions.

Detailed analysis

The State of Morelos has been making significant investments in policies to mitigate climate change. These positive changes had been highlighted in the Territorial Review. For the first time, the Ministry for Sustainable Development counts with a General Directorate of Energy and Climate Change. The Directorate adopted in 2015 the State Programme of Actions against Climate Change (PEACCMOR), which is the main policy instrument to identify, promote and co-ordinate actions to reduce carbon emission and invest in mitigation and adaptation efforts.[17] The ministry has also developed a management plan of carbon emissions, a state strategy for energy efficiency, created the green zone of Cuernavaca, and enacted the inter-ministerial commission against climate change to co-ordinate and align measures at the state level (CICCMOR).

Morelos counts with several environmental planning instruments. As advanced in a previous section, the state law for ecological protection (LEEPAEM), followed by its regulations, is further accompanied by the state programme POEREM. The state also has the climate change action plan (PEACCMOR). The programme to identify and manage risks is the State Programme for Risk Management (PEGROTM). The Risk Atlas is a technical risk assessment of the territory of Morelos and in this sense, it complements and supports the implementation of the PEGROTM (see discussion). The different aspects of ecological land management, such as preservation of natural areas, waste treatment and water management are regulated by specific plans and programmes. The system is executed by the Ministry for Sustainable Development and in some of these issues advised by the State Council for Ecological Land Management (COET).

The environmental planning system in Morelos needs to be better integrated with urban development and human settlement matters. The Federal Strategy for Ecological Land Management 2013-18 established ten action lines, in accordance to the National Development Plan, and among those is to **promote the integral planning of the territory, considering the ecological land management and the land use planning to achieve a sustainable regional and urban development**.[18,19] This priority is partially reflected in Morelos' plans and action lines. As expressed in the Strategic Plan 2013-18, the lines of action are to update the POEREM, which was done in 2014; to support the development of Municipal Environmental Land Management Plans; to organise urban areas and conurbations; to preserve natural areas; and to create a strategy to recover watersheds. Other important lines of action are to frame urban and housing development under the paradigm of sustainability and prevent real estate development in risky and endangered areas.

Moreover, the system should be incorporated at the municipal level, as the legal acts already indicate. Municipalities need technical and financial assistance to do so. The resort to international partnerships can be useful in this case. The elaboration of Municipal Climate Action Plans (PACMUN) in 31 out of the 33 municipalities, with funding from the United Kingdom's Embassy and consultancy from ICLEI, is a good example in this direction. It also shows that there is room for the state level to launch initiatives without depending directly on federal efforts but aligned with them.

The metropolitan level could also benefit from such integrated view of sustainable development. The two federally-recognised metropolitan areas of Morelos, which are Cuernavaca and Cuautla, need comprehensive metropolitan planning systems. It could comprise development plans, a technical assistance body, and a citizens' council, as it is in the metropolitan area of Guadalajara, Mexico.

The Ministry for Sustainable Development has 26 collaborative projects ongoing with 11 different countries on climate change and sustainable development. They have also participated in international fora such as the COP 13 for Biodiversity held in Cancun 2016. The participation in events and the alignment with international fora is much welcomed. Since the Territorial Review, Morelos did not engage in new partnerships, directing efforts to maintain and finalise existing projects, such as the abovementioned Municipal Climate Action Plans. This approach is advisable, as it ensures Morelos engages only to the limit of their capacity and that partnerships are well-structured.

Envisioning the long-term, the State of Morelos should consider international partnerships in a strategic manner, always in alignment with the federal government. This approach could, for instance, depart from a diagnostic of the main challenges regarding climate change mitigation, or from the action lines of the State Strategic Plan. Other state Ministries could be closely involved in this task. An indication that this type of strategic approach could work for Morelos is the portfolio of projects that the ministry has been developing. As of 2018, the ministry counts with around 15 projects that can be presented to other state ministries and to international stakeholders for funding. Most projects concern renewable energy and energy efficiency: hydroelectric power plant, solar panels, electric cars for the public administration and others. A few projects address the state's own capacity to do studies and plans on this matter.

The last aspect addressed by the recommendation is the use of fewer contaminant fuels in public transportation. One remarkable action is the conversion of 3 000 taxis to natural gas, promoted by the state, with the support of Mexico City Megalopolis and SEMANART. The project of Bus Rapid Transit (BRT) in Cuernavaca, the *Morebus*, with

buses fuelled with natural gas was however cancelled. The state should promote the adoption of electric buses or buses fuelled with natural gas. The bus system being run by concessionaires, the state should include the conversion to natural gas as a condition for concession renewal. Furthermore, the state should invest in non-motorised transportation modes, such as walking and cycling (see section about Connectivity and Mobility). A multi-modal public transportation strategy can bring health benefits to users, improve circulation and reduce fossil fuel emissions.

Governance and finance

Vertical and horizontal co-ordination

Recommendation

10: Foster co-ordination of the state administration with municipalities, and with neighbouring states	
Sub-recommendations	
30	The State of Morelos should seek strategic alliances with neighbouring regions on business development issues (such as with the state of Puebla on the automotive industry) as well as infrastructure provision, such as highways or railroads. The CONAGO forum among state governors represents an opportunity for greater interstate co-operation, but it should be integrated with technical groups of analysis that could provide support to regional governments and exchange good practices in addition to representing states at the national level.
31	Strengthen the roles of the COPLADES so that it becomes a real forum for strategic co-ordination and partnerships between state and local administrations. Develop further mechanisms between the state and local administrations.

Summary

This recommendation seeks to address the issue of policy co-ordination across levels of government both vertically and horizontally. The first sub-recommendation puts emphasis on the benefits that the State of Morelos could reap from improving its co-ordination with other regions in improving public service provision, strengthening economic growth, building up administrative capacities and reinforcing its bargaining power vis-a-vis the central government. The second sub-recommendation focuses on strengthening the use and role of the COPLADES as co-ordinating mechanisms between the state and municipal levels in better aligning strategic planning objectives while providing enough room to adapt policies to the local context.

There has been modest progress in the two aspects of this recommendation, although potential for improvement remains high. Indeed, the co-ordinating role of the CONAGO has been maintained, but not strengthened, and little evolution has been made in enhancing relationships with neighbouring states although some inter-regional agreements of co-operation have been taken around scientific and tourism topics. As far as the co-ordination between the state and municipal levels is concerned, there has been a positive, but limited, evolution. The presence of state representatives in the COPLADEMUN has increased, seeking to inform and invite municipalities to align and adapt state-level policy priorities to their territory. This evolution is positive but remains limited in scope and struggles to foster bottom-up policy development.

Detailed analysis

The sub-recommendation 30 puts emphasis on the benefits that the State of Morelos could reap from improving its co-ordination with other regions as well as from forging economic development alliances and co-ordinating the provision of public services with neighbouring states. Working hand in hand with other states in the framework of the CONAGO would also give states more bargaining power when negotiating with the central government, pooling resources to enhance their strategic administrative capacities, while at the same time providing governors and secretaries from different states room to exchange on best practices. The CONAGO already plays that role but this forum could be further leveraged. There has been very little evolution on this matter over the analysed period.

The second part of this sub-recommendation encourages Morelos to create strategic economic alliances with neighbouring states and partnerships to improve public service provision. In doing so, it invites Morelos to take into account functional areas going beyond administrative boundaries on topics such as security, transport, health or education; but also, on economic development policies. Currently, the most advanced partnership remains the agreements developed within the megalopolis around transport policies. Some steps have been taken to develop scientific co-operation with the states of Queretaro, Guanajuato, Mexico City and Estado de Mexico. Also, in terms of tourism and agreement has been made with Mexico City to incentivise social tourism in Morelos and Mexico City

On public service provision, the Territorial Review provided concrete examples of possible co-operation such as finding agreements for information sharing and joint police actions with the state of Guerrero. It also showed how co-operation could enhance the quality of connectivity with policies allowing to make the most out of the recent investments in highways and railroads to access ports. On the economic development aspect, an economic alliance with the state of Puebla could contribute to the creation of a vibrant automobile industry cluster based on the development of integrated value chains and complementary human capital formation. Both Morelos and Puebla are active in that sector and suffer from strong competition from states located at the north of the megalopolis (the Bajio region).

The human capital council should contribute as a by-product of its action to create the basis for economic collaboration with neighbouring states by deepening the knowledge on economic sector and unveiling their strengths and weaknesses. The Council is also contributing to better organise the public sector, academia and business actors in a more collaborative dynamic thus forging a strong and united set of actors.

Much remains to be done to advance on this recommendation but the underlying conditions for the materialisation of such an alliance have improved. Nonetheless, the electoral period and changes in the different administration may reduce political willingness for compromise, at least for a period of time.

The distribution of competencies between the three levels of government in Mexico (OECD, 2016) and the adoption of a territorial approach requires strongly co-ordinated policy actions between the state and municipal governments. Recommendation 31 proposes to strengthen the COPLADES and the different COPLADEMUN, which despite their downfalls, are currently the most institutionalised form of co-ordination between the state and municipal level of government. As such, it is the institutional arrangement better placed to foster co-ordination. The recommendation of the review called for a

strengthened co-operation between the state and the municipalities particularly in the alignment of their strategic planning objectives while providing enough room to adapt policies to the local context. This contributes to policy coherence and to ensuring that the state can benefit from policy complementarities and economies of scope and scale.

Since the review, representatives of the state government have increased their presence in the different COPLADEMUN. Their actions serve to better channel and explain policy objectives and priorities of the state government to municipal governments while providing them with advice on the best way to align their policies with those of the national and state level. These delegates can also advise municipal governments on spending priorities. For example, since the earthquake, particular emphasis has been put on the use of the funds from the FAIS for the development of a "Risk Atlas", an instrumental tool for land use planning.

The stronger presence of government delegates is a significant improvement from the previous situation. Nonetheless, the recommendation also sought for a more bottom-up deliberation process, in the sense that the discussions of the COPLADEMUN would in return also serve to nourish the planning decisions made at the state level. This step would also be important to build trust between both levels of government. This second part has received much less attention despite being essential for the adoption of a place-based approach to policy making. The State of Morelos should also make sure that these co-ordination mechanisms do not lose their strategic component. Municipalities retain strong levels of own competencies; therefore, the state may need to further develop incentive mechanisms (fiscal or through the attribution of prices of recompenses) and naming and shaming mechanisms to guarantee the applications of public policies at the municipal level.

Governance and business environment

Recommendation

11: Improve governance mechanisms and the business climate	
Sub-recommendations	
32	Develop a public service administration that can fully conceive and implement long-term planning and evidence-based policy making and their corollary: policy monitoring and evaluation.
33	Restore trust in the public administration by adopting the national anti-corruption policy, providing public information on policies namely on expenditures, and creating a single-stop shop to clarify the rules and regulations of the myriad of transferred funds.
34	Strengthen the State Council for the Evaluation of Social Development by providing it with proper funding and human resources to evaluate public policies in the State of Morelos at a larger scale.

Summary

This recommendation refers to governance mechanisms that would: i) improve the quality of policies at short, medium and long term by developing a public service administration; ii) contribute to restoring trust in government by developing anti-corruption policies and fostering accountability in the use of resources; and iii) reinforcing the evaluation mechanisms of public policies with the inclusion of feedback loops in policy design.

Evolution on these three fronts has been mixed but overall significant, with some areas showing greater reforms than others. As far as the first element is concerned, some positive advancements have been made in terms of planning, namely through a legal reform that imposes the administration to develop short-, medium- and long-term planning. Despite this evolution, there has been little or no evolution on the development of a more stable civil service in the public administration, instrumental to ensure policy continuity. Reforms have also been undertaken to adapt the national anti-corruption regulation to state law, but some political frictions and legal suits are still preventing the approval of the law. In terms of accountability, no advancement has been made to provide a single-stop shop allowing citizens to navigate the myriad of available funds. Finally, the evaluation mechanisms for social policies have been strengthened with the provision of further funds and human resources to the COEVAL.

Detailed analysis

In the state Morelos, as it is the case in Mexico more widely, there is strong spoil system in the public administration. This tends to reduce capacities at the regional and local level and hamper policy continuity and institutional memory. This recommendation invites Morelos to develop, ideally with other states, a pool of well-trained and experienced public servants that could follow a public service career. These public administrators would be better protected from political changes and would have career development opportunities in the different states that would be willing to collaborate with the State of Morelos in this endeavour. Coupling such a system with the development of medium and long-term mechanisms of planning, and of evidence-based policy-making systems would contribute to better focusing public efforts towards clear objectives while giving continuity to public policies.

In this realm, the State of Morelos has presented a law to the State Congress rendering compulsory the introduction of short, medium and long-term objectives in the planning instruments. This new law connects long-term planning objectives in line with attaining the SDG objectives. Forty indicators have been assigned to monitor these long terms goals, and their evaluation has been set to take place every second year.

The establishment of this planning regulation for the state will mark an important step forward in the establishment of medium and long-term objectives for public policies. A proper implementation of this regulation will require both instruments to match planning with budgeting and special attention will have to be put on the types of indicators set in place, guaranteeing that the latter are outcome indicators rather than output indicators.

Evidence-based policy-making still remains a challenge that should be seen as going hand in hand with the different planning instruments, indeed an improved system of regional statistics, as well as a thorough evaluation of the policies in light of the established objectives, will be essential to adapt policies based on feedback loops. Advancements with regards to the role of COEVAL in the evaluation of public policies mark a significant positive sign on that matter.

Despite positive evolution on some aspects of this recommendation, little advancement has been made on the establishment of a public sector less reliant on the spoil system. This type of policy may indeed require some legal changes and political consensus but it does constitute a cornerstone for the establishment of efficient bureaucracies.

Restoring trust in the public administration, simplifying administrative procedures and providing the tools for enhanced accountability remains one the most pressing issues in Morelos, as it is the case in Mexico at large. Moving forward on this agenda is not only a democratic duty but also a means to improve government efficiency. The tool developed

in partnership with the World Bank to improve the quality of indicators, administrative registries and open data signals a good direction.[20]

In that sense, the recommendations exhorted Morelos to adopt the regional anti-corruption system by adapting the national scheme and setting the required institutions and legal framework in place for its full implementation. Morelos has indeed made positive advances on this matter by adopting eight regulatory reforms. The anti-corruption scheme is comprised amongst other by a reform on investigative and sanctioning powers for corruption cases, the compulsory declaration of conflicts of interest, the reform of state-level public procurement by realising it through the national system Compranet, the creation of an ethics committee and the reinforcement of transparency mechanisms in public works. The whole scheme has almost fully been adopted, some laws are still being processed and one of them is pending a court decision. Setting up this framework is an important first step that needs to be complemented with strong and thorough enforcement mechanism which implies sufficiently resourced and independent control bodies. Some of the present reforms will be instrumental for enhanced transparency such as the realisation of the public procurement process through Compranet or the publication of the evolution of the process for public works.

Nonetheless, to be fully efficient as accountability mechanisms, information on public spending will have to be published in citizen friendly formats as well as in a more detailed and desegregated formats to be useful for researches and civil society organisations. Such accountability mechanisms must also include more qualitative elements, for example publishing spending and physical progress of public works will have limited utility if the only information provided relates to the percentage of the process accomplished. Here again, indicators used will have to be calibrated to evaluate outcomes rather than outputs or mere speed of implementation.

Another fold of this recommendation concerned the creation of a single-stop-shop compiling the myriad of available funds (including their rules of operation) to which municipalities, firms and citizens could apply. The provision of this information also requires timeliness in the delivery of information. Currently, the complexity of the processes, as well as the lack of timely information, often forces recipients to seek for support of external advisors. Unifying and simplifying the system would increase readability and improve coverage across the board while reducing the margin for discretion. No advancements have been made on this front.

As far as the business environment is concerned, Morelos has reformed its Constitution to include quality of regulation as one of the constitutional objectives. It has further passed a significant amount of the regulation required for the implementation that policy. These efforts have Morelos to be ranked, by a ranking established by the national Ministry of Economy, the Federal Commission for Regulatory Improvement, the Centre for Economic Research for the Private Sector, and the Union of Private Firms, as the state that has advanced the most in this process. Amongst the main achievements of this new legislative package is the reduction of time to open a “risk-free” business to 72 hours in the best performing municipalities. This achieved has been done hand in hand with municipal governments that have received a package that includes software to process these operations. Amongst the other relevant measures of the package are: a more thorough evaluation red tape imposed at different levels of government and the requirement for the three powers (executive, legislative and judicial) to carry out impact analysis of their decisions.

To continue moving forward on this avenue Morelos will need to strengthen the regional Commission for Regulatory improvement with the provision of sufficient human and

financial resources. Improving regulation will also require adhesion from municipal governments given that they are competent for a significant amount of the administrative procedures impacting businesses. In that sense, the creation of an incentive structure rewarding mayors signing agreements with the state level to improve their regulation could be an important asset.

Finally, this recommendation sought to reinforce COEVAL in its role in public policy evaluation. In this realm, Morelos has shown significant improvements. Indeed, the budget of the institution has increased by 34% and the number of programmed policy evaluations has increased from 10 in 2015 to 24 in 2017. The work of the COEVAL in Morelos has been recognised by the National authorities as being in the top tier of the commissions across the country in terms of regulatory capacity of evaluation and for its technical capacities.

Going forward, COEVAL could be more active in the design of public policies building on its evaluation experience. Furthermore, it can focus on more long-term objectives with indicators based on outcomes. Such evolution of the role of the commission has to go hand in hand with the improvement of statistics at the subnational level. Both elements put together will allow the development of strong evidence-based policy making as well as the creation of essential feedback loops in the system contributing to improving public policies along the way.

Regional and local finances and investments

Recommendation

12: Morelos should improve the management of its own funds, including transfers to municipalities	
Sub-recommendations	
35	Undertake an audit of both the tax base and the tax collection mechanisms to improve own revenue collection in the State of Morelos.
36	Improve property tax revenue by following a two-step action: first updating cadastres, and then effectively collecting taxes. The state should support municipalities (especially small ones) through technical assistance efforts to update the cadastre. With regards to enforcement, the state administration could collect property taxes on behalf of smaller municipalities with low capacity and on the basis of contractual agreements.
37	The state administration should support local governments in increasing revenue from services such as water provision, street lights or garbage collection. A transitory period should be considered to reduce resistance to price increase and allow the quality of the service to improve.
38	Reform the transfer formulas to create incentives based on needs and policy outcomes
39	Resources for productive investments should have a results-oriented assignment mechanism conditional on co-ordination between municipalities

Summary

This recommendation seeks to improve Morelos' capacity to raise revenue and spend it efficiently. Morelos is the 12th state with the lowest levels of own revenue collection as a share of all revenues. It only collects 6% of all its revenues. Morelos is also the 6th from the bottom in the ranking of states with the lowest level of own revenue collected per capita. Other states have shown significantly better results, demonstrating that there is room for improvement. In that sense, the review recommended Morelos to undertake a

broad audit of its taxing structure to identify opportunities for increased efficiency in tax collection, as well as opportunities to increase the tax base. The second component of the taxation measures lies in the capacity of municipalities to collect revenues from local public services and taxes. Morelos, as it is more generally the case in Mexico, has low levels of collection efficiency at the local level and public services tend to be structurally under-priced. The second part of the recommendation advocates for a reform of the transfer system to include a more incentive-based structure and an evaluation of productive investments based on outcomes. The latter part remains a difficult political reform and requires political consensus on the budget priorities.

In this sense, some positive reforms have been promoted to increase the tax base at the regional level. Agreements have been signed between some regional and municipal tax administrations to transfer coercive power to the regional tax administration in an effort to pull resources and increase administrative capacities. Training of municipal public servants specialised on the fiscal matter is also being undertaken. Measures have also been taken to improve the quality of public expenditure. Despite these efforts, some challenges remain. To face these challenges, a complex set of answers in the medium-term is required, as well as stronger political buy-in from the different stakeholders.

Detailed analysis

The State of Morelos has partially realised an evaluation of the taxation system and taken measures to improve revenue collection. The main reform measures include the inclusion of tourism intermediaries (such as marketplace platforms for touristic accommodation) as part of the taxable base. Prior to the reform, only hotels and directly rented accommodation were subject to the tax, while these platforms represent around one-third of the market share for touristic accommodation in the state. The other reform includes a depuration of the payroll registry; indeed, this should allow incorporating a wider share of the labour force within that registry. Finally, Morelos has pushed a reform allowing the finance minister to control the vehicle registry for taxation purposes, vehicular tax in the second biggest source of own revenues, thus being an important share of the stake.

Despite these positive evolutions, there is still margin for improvement. The reforms undertaken will have a limited impact on the overall collection. For example, the accommodation tax remains a relatively small share of the overall tax collection effort; therefore, this measure will have a limited impact on the overall accounts. On the contrary, the state has lost one of its main incomes with the removal of the tax on vehicle ownership. Morelos followed the same path as other states in a highly politically charged decision.

Other avenues to improve tax collection could be explored such as the current creation of an environmental tax in Zacatecas. In the case of tax collection, the state faces two strong challenges to increase tax collection; both require a wider approach to tackle them:

- First, enforcement capacity of the tax administration is low. This phenomenon, coupled with the prevalence of high levels of informality and low levels of willingness to pay, further reduces enforcement capacities in a vicious circle.
- Second, the current transfer system creates incentives to enter a blame-shifting game rather than increasing revenue collection. Such a mechanism tends to increase the political cost of tax increase, with is further increased by the need for co-ordination with other levels of government to raise tax rates and/or improve the base. The electoral system further reinforces these trends.

In the short term, own revenue collection should decrease despite the efforts of the administration, as a consequence of the earthquake. Indeed, the earthquake will hit revenue rising because of the destruction of a number of businesses and because of fiscal measures put in place to help business recover. These measures mostly take the form of transitory tax breaks.

At the municipal level, tax collection is an even more prevailing challenge. The lack of capacities (human and administrative), high levels of informality and political cost of tax collection tend to conduce to stagnant levels of tax collection. Morelos has undertaken training of municipal agents to increase collection of water and property. More regular and widespread charging of taxes can significantly raise collection.

The recommendations had proposed pooling resources to improve the administrative capacity of tax collection agencies and reducing the burden on individual municipalities. Two potential models were envisioned: i) collaboration between municipalities (horizontally) or ii) with the state government (vertically). Morelos has decided to bet for the second and has signed three agreements with municipalities to collect taxes. Under these agreements, the state tax administration is in charge of collecting taxes for the municipality, while the municipality only has to pay for the administrative cost of that function. If tax collection improves, municipalities gain from both higher levels of income as a direct effect but also indirectly from the incentive system created at the federal level to increase municipal tax collection. Despite these notable advantages, there is some resistance in the municipal chambers to vote for such agreements, mostly for political reasons, proof of it is the reduced number of municipalities that have been willing to sign such agreements.

Tax collection at the municipal level also remains structurally low because of the lack of an updated cadastre. This challenges revenue creation in the following way: i) the lack of actualised property value prevents municipal governments from collecting taxes on increasing property values; and ii) cadastres do not account for numerous informal settlements thus mechanically leaving an important fraction of land out of the taxing spectrum. The latter has a strongly negative impact on public finances: politically the municipal government is compelled to provide basic public infrastructure to informal settlements but does not receive income to do so, nor does it receive income based on the increase of property values induced by those investments. Co-operation with the state and national government on that front is ongoing, but the magnitude of the phenomenon requires a strong multi-sectoral approach involving the use of push and pull factors as well as a strengthened planning capacity.

Revenue collection from public service provision, such as water, garbage collection or public lighting, at the municipal level is also structurally low. The provision of such goods is not only priced significantly below market prices, but it is also subject to many exceptions and limited enforcement. The recommendation invited the state government to work and in hand with municipal governments in improving administrative and enforcement capacities to improve revenue collection. In that sense mechanisms such as the tax collection agreements signed between the state and the municipalities could also be envisioned for this type of revenues. The recommendations advocated for the support of the regional government in the creation of a transition fund that could finance a gradual increase in service prices without producing a shock of household expenditure. Increased revenues would have to be destined for improvement in public service provision to increase willingness to pay, thus creating a virtuous cycle.

The government of Morelos has been working in co-operation with the *Instituto de Desarrollo y Fortalecimiento de Morelos* to better train municipal public servants on the fiscal matter. It is also pushing forward an update in the price charged for local public services. In parallel, the state has offered to municipalities the option of co-payment of projects of water infrastructure. For each dollar invested by the municipality, the state would contribute with the same amount. This co-payment mechanism is an incentive for municipalities to invest in water and hydric infrastructure, hence improving the quality of the water provision service. This could lead to gradually increases of the price charged, bringing in more revenues to municipalities.

The Territorial Review of Morelos also recommended reforming the transfer formula of funds to the municipal government. Most of the challenges that arise from the transfer system mechanism do originate at the national level, but the state government has, although small, a margin to reform part of the transfer arrangements in their allocation to municipal governments within the current scheme. State governments must transfer to municipal governments at least 20% of the funds received through the revenue-sharing mechanism of the *Fondo General de Participaciones* (FGP). In the recent years, the State of Morelos has added or reduced this percentage, depending on political influences and informal negotiations with municipalities. After a recent reform in 2017, the State of Morelos now transfers the exact 20% to municipalities and leverages other percentages to 2 different funds. 1% is directed to the fund for municipal development, which is used to pay public debts, ensuring governability in municipalities with outstanding debts. 2% are directed to the fund for municipal infrastructure and administration, which is used to pay municipal staff and to support public works necessary after the earthquake of 19 September. These funds make the use of money from transfers more targeted and coherent to the needs of municipalities.

However, the application of these funds is not monitored by the state. There is no way of actually knowing how municipalities are spending the money, and if they are doing so effectively. This is definitely an issue to be addressed by the State of Morelos in the medium term. Another pending issue is how to create incentives for better using funds according to municipal plans. These extra percentage points could be distributed using a formula that attaches spending to municipal strategic priorities, as well as promoting projects that reduce gaps in public service provision, incentivises local governments to update cadastres and planning instruments or to improve tax collection.

Finally, the last recommendation concerned raising the efficiency of productive investments by building distribution formulas that integrate the use of outcome indicators and promote vertical and horizontal co-operation. The current administration has sought to raise the efficiency of productive investments by creating a Public Investment Unit which manages a portfolio of investment projects. Projects are conceived in co-ordination with municipalities and further evaluated by the Investment Unit. This is an important step forward in terms of co-ordination, prioritisation and evaluation.

To gain better efficiency, links between the work of this unit with the planning and budgeting instruments, as well as with the Human Capital Council have to be strengthened, and competitive mechanisms for resources could be reinforced. As discussed in the Review, a system such as the one put in place in Brandenburg, which reassigns resources annually based on the evaluation results, could be explored in the medium term.

Notes

[1] High schools compose what in Spanish is called *Instituciones de Educación Media Superior* (IEMS), a system that comprises the baccalaureate and preparatory courses.

[2] The option of changing the rules of operation of the programme to target low-income students had been addressed in the TR but the state of Morelos did not wish to pursue this recommendation. For this reason, this option is not repeated again in this Review.

[3] Information retrieved from: http://iebem.morelos.gob.mx/contenido/programa-escuelas-de-excelencia-para-abatir-el-rezago-educativo.

[4] The Programme can be retrieved at: http://www.cdi.gob.mx/programas/2014/programa-especial-de-los-pueblos-indigenas-2014-2018.pdf.

[5] See: http://morelos.gob.mx/?q=prensa/nota/emprendedores-nacionales-eligen-morelos-para-desarrollar-sus-ideas.

[6] For an overview of entrepreneurial education programmes in Europe, see European Commission (2014[40]).

[7] For basic information about CONOCER, see: http://conocer.gob.mx/.

[8] Information available at: http://sicyt.morelos.gob.mx/articulos/tecnocemitt.

[9] Some information about the PEI CONACYT 2018 call for projects can be found at: https://www2.deloitte.com/content/dam/Deloitte/mx/Documents/tax/Flashes2017/Estimulos-CONACYT-2018.pdf.

[10] Law available at: http://www.diputados.gob.mx/LeyesBiblio/pdf/LGAHOTDU_281116.pdf.

[11] Information available at: http://morelos.gob.mx/?q=prensa/nota/inician-foros-del-programa-de-ordenamiento-territorial-y-desarrollo-urbano-sustentable.

[12] See http://arcg.is/emy4i.

[13] Available at: http://www.transparenciamorelos.mx.

[14] To a more complete analysis on this matter in Mexico, refer to OECD (2016), *Open Government Data Review of Mexico,* Paris: OECD Publishing, http://dx.doi.org/10.1787/9789264259270-en.

[15] *In verbis*: "Que el Consejo Estatal de Desarrollo Urbano, es el órgano por excelencia de participación ciudadana en la materia, el cual se constituye actualmente por cerca de doscientos miembros representativos de asociaciones, cámaras, instituciones académicas, colegios de profesionistas, organismos no gubernamentales; un órgano de tal proporción difícilmente puede ser operativo, por tal razón la iniciativa propone la creación de la Subcomisión Técnica, cuyas funciones serán asesorar y apoyar permanentemente al Consejo y atenderá los asuntos que a éste le competan."

[16] See: http://www.ifema.es/PresentacionInet/groups/public/documents/formulario/if_119275.pdf.

[17] Programa Estatal de Acción ante el Cambio Climático de Morelos, available at: http://periodico.morelos.gob.mx/periodicos/2015/5268%202a.pdf.

[18] Original in Spanish: "Impulsar la planeación integral del territorio, considerando el ordenamiento ecológico y el ordenamiento territorial para lograr un desarrollo regional y urbano sustentable".

[19] Information available at: https://www.gob.mx/semarnat/acciones-y-programas/ordenamiento-ecologico.

[20] See: https://www.hacienda.morelos.gob.mx/images/docu_planeacion/evaluacion/metodologias/Acuerdo_creacion_y_regulacion_de_la_Comision_Coordinadora_del_SEDE.pdf.

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Chapter 3. The Central Mexico Earthquake

This chapter provides an account of the damages caused by the earthquake of 19 September 2017 in the State of Morelos, as well as the policy responses delivered so far, in light of the national framework, which has been consolidated from the 1980s onwards. The policy response has been quick and well co-ordinated, and the reconstruction process has been comprehensive. Nonetheless, it offers some indicators for the recovery and reconstruction process, in terms of housing, land tenure and urban planning. The State of Morelos can use this momentum to promote formal property rights, grant safe and adequate housing, and envision the sustainable development of its cities. Lastly, the chapter indicates key elements and instruments of risk governance that could be incorporated by the state with the aim of increasing preparedness and improving response in the event of future disasters, according to international guidelines.

Assessing the impacts and damages of the earthquake

Mexico is reported to be one of the most active tectonic areas in the world. It is placed at the encounter of different fragments of tectonic plates and has deep, layered soils which make for the great amplitude of shakings. It is estimated that 40 small earthquakes occur in Mexico per day. On 7 September 2017, an 8.2 magnitude earthquake hit the state of Chiapas in the south, the strongest ever recorded in the country (IBD, 2017[16]).

Less than two weeks after, on 19 September 2017, the Central Mexico earthquake hit the states of Morelos and Puebla and the Greater Mexico City area, with a magnitude of 7.1. This earthquake was the deadliest one of the past 32 years in the country, with 369 casualties and more than 6 000 people injured (IBD, 2017[16]). The strong shaking for one minute, combined with the large amplitude of the static stress, caused the collapse of several hundred buildings, as well as road and energy infrastructure over a large area.

The State of Morelos, as one of the epicentres of the 19 September earthquake (S19), was strongly affected by it. State authorities report the following numbers (Morelos, 2017, pp. 85-87[17]):

- 74 casualties and 1 945 injured people
- 7 410 homes suffered total damage, and 16 386 suffered partial damage
- 3 medical centres were totally destroyed (Jojutla, Tlaquiltenango and Yautepec), 9 suffered major damages, and 32 suffered moderate damages, out of a total of 222 units
- 41 schools must be completely rebuilt
- 2 municipal markets (Zacatepec and Oaxtepec) were shut down.

Furthermore, historic and cultural buildings such as colonial farms, churches, convents, museums and cultural centres were partially affected and had to be temporarily closed. Sports infrastructure suffered partial damages, too (one water complex, four courts and six sports units). The temporary closures had a negative impact on tourism, which is one of the most important economic activities in the state. Damages to the cultural and historic heritage of Morelos may require specialised reconstruction and restoration, which may be lengthy and costly.

Hydraulic infrastructure including dams, channels, storage tanks, pipelines and treatment plants were affected. These damages impaired water distribution to millions of households in the aftermath of the disasters. 16 stretches of road and 6 urban streets were damaged, and 3 bridges were fractured. Traffic disturbances further complicated the recovery process. The fractured bridge in Jojutla, for instance, complicated the access by rural dwellers to aid centres located in the city.

More than 1 500 schools also suffered partial damage. Luckily enough, at 11 am on that day, Mexico held the public annual drill in remembrance of the earthquake of 19 September 1985, the deadliest one in the history of Mexico. These 2 major earthquakes happened on the same day, separated by 32 years. When the 2017 earthquake hit, only two hours afterwards, most schools were already evacuated or could quickly be so, which greatly contributed to preventing human losses. Still, 86% of schools suffered structural damages (Morelos, 2017[17]), which delayed the return of classes for several weeks.

Regarding economic activity, 22.5% of commercial establishments in Morelos reported having been affected by the earthquake (INEGI, 2017[18]). In addition, 55.2% of commercial establishments in Morelos reported having suspended activities after the earthquake (INEGI, 2017[18]). This means that some establishments closed temporarily because of the general situation despite their infrastructure not having been particularly damaged. In all, the physical damages and the interruption of business bring forth significant economic losses to the private owners and to the State of Morelos as a whole.

Legacy of earthquake response in Mexico

There is no doubt that the S19 earthquake brought major physical and human losses. Still, damages were considerably lower than the ones caused by the 1985 earthquake, in which 10 000 people lost their lives and more than 400 buildings completely collapsed. Even considering that the 1985 earthquake was considerably stronger, of magnitude 8.1, the steps that Mexico has taken to reduce the negative impacts of earthquakes are remarkable. Some of the key changes will be mentioned here.[1]

In 1986, the National System for Civil Protection was established (SINAPROC). This led to the extensive development of emergency management plans in federal institutions. Critical services and infrastructure operators, key economic sectors, and in fact most of the public administration, as well as a large part of civil society, are prepared to activate an emergency plan in case a disaster occurs. SINAPROC is meant to co-ordinate groups of institutions, with the aim to develop a system of integrated risk management. One of its key challenges is to ensure that the many federal, state and municipal civil protection services function as a flexible whole together with companies, volunteer organisations and research institutes from different sectors (OECD, 2013, p. 16[19]).

An early-warning system called SASMEX, the Seismic Alert System of Mexico, was created in 1991. Today, it counts with 97 sensors and several monitoring stations across the country. Even though the coverage is quite broad, it has room to expand, notably to the south of the country. Sensors identify the intensity and location of earthquakes, and alerts are sent out to warn sub-national governments, schools and emergency organisations. Alerts can also be sent via public radio, television and smartphone apps. Considering that it takes around 60 to 90 seconds for an earthquake to spread from the epicentre, the system allows people to take life-saving measures such as seek cover, to stop an elevator at the nearest floor or to stop factory operation to minimise damage.

Together with the early-warning system, Mexico has developed a culture of preparedness. Every 19 September, the annual drill is carried out, which is furthermore an act of remembrance of the lives lost in the 1985 earthquake. Schools and public institutions have periodic drills and training sessions, too. Engineering schools have specialised courses on earthquake risk, mitigation and preparedness. Agreements have been signed with high education institutions in Japan and the United States, for instance.

In terms of emergency planning, Mexico has several instruments. The Strategy for Preparedness and Response of the Federal Administration for High Magnitude Earthquakes and Tsunami (*Plan Sismo*) defines public agencies' responsibilities in the event of a major earthquake. Organised around 3 response areas (operational, logistics and administrative), 14 working groups have been defined with their co-ordinating agencies and their members. This plan represents the first comprehensive emergency plan with clear co-ordination mechanisms and may prove to be a major forward-looking achievement for SINAPROC that could serve as a model in contingency planning for other extreme hazard scenarios (OECD, 2013, p. 22[19]).

Since 1991, Mexico has been developing risk atlases. The National Risk Atlas of Mexico is a portal that contains risk information for the whole country, including earthquake risk, from hazard analysis to vulnerability mapping.[2] It includes information on economic and human losses and metadata describing the assets at risk. The development of this innovative tool has stimulated the risk assessment process countrywide, as its objective is to gather all of the risk atlases that are developed at state and municipal levels. The integration of atlases from different levels has not yet reached the point, however, where the local level automatically informs the next level above. The key to attaining this objective is to ensure that all entities providing input, from federal to state and municipal levels, use the same methodology and data standards. This requires multi-disciplinary collaborations among several scientific communities and organisations (OECD, 2013[19]).

In complement of the National Risk Atlas, the System for the Analysis and Visualisation of Risk Scenarios (SAVER) is a tool that civil protection authorities in Mexico use to integrate information from risk scenarios into policy making. SAVER gathers risk maps and geo-referenced vulnerability data on hospitals, schools, public infrastructure and population into one single database. SAVER is the result of a horizontal and vertical effort across organisations throughout the country. Currently, its capacity to create risk scenarios is one of its most important characteristics (OECD, 2013[19]).

Mexico also created the Natural Disasters Fund (FONDEN), in the late 1990s. The FONDEN grants federal resources to states and municipalities in two interrelated spheres. The primary programme is channelled towards reconstruction programmes. It funds the rehabilitation of public infrastructure, housing and of the natural environment, such as forestry and bodies of water. It can comprise reconstruction with higher standards, following the principle of *Build Back Better,* and the relocation of public buildings and communities to safer zones (IBRD/World Bank, 2012[20]). The second programme, with smaller funds but whose importance has been increasingly recognised, refers to the *ex ante* management of disasters (IBRD/World Bank, 2012[20]). It includes the financing of resilience plans, risk assessment studies and other anticipatory measures to better understand and prepare for the risk of disasters. Mexico has also signed insurance agreements with the World Bank and issued catastrophe bonds with their assistance.

In 2006, FONDEN issued the world's first government catastrophe bond, Cat Mex, which provided coverage against earthquakes in three zones of the national territory. The USD 160 million "CAT bond" was part of a USD 450 million catastrophe risk transfer strategy. Under the terms of the CAT bond, a payout is triggered if two conditions are met: i) an official state of emergency or disaster declaration is issued by SEGOB; and ii) an earthquake with a specified magnitude, depth and epicentre within the three pre-defined zones is registered. This CAT bond was renewed in 2010 and expanded into a multi-risk instrument for earthquakes and tropical cyclones (OECD, 2013, p. 25[19]).

Mexico has strengthened building regulations. The 1986 building code is considerably stricter than the 1976 code, and it better addresses the particularities of land developed on top of the buried lake. Since then, building materials and construction techniques have advanced, and engineers and architects are better equipped to consider seismic risk. With the adoption of the 2012 General Law for Civil Protection, which considers risk atlases as the reference for the construction of new buildings, municipal building codes have to adjust in conformity. Developing such instruments requires specific technical knowledge, which is a challenging task for some municipalities (OECD, 2013, p. 109[19]).

There are some other barriers to the application of new building codes. For one, the building stock still has older constructions, and assessing their earthquake-resistance and

retrofitting them to comply with the new building codes comes at a high cost. There is no specific funding mechanism to support the retrofitting of private property, nor are tax deductions made available as an incentive for making such capital investments (OECD, 2013, p. 108[19]). In addition, the rules are in many instances simply not followed during construction, especially in informal settlements in peripheral zones (Reinoso et al., 2009[21]). On top of that, law enforcement lags behind what would be deemed necessary. More precisely, state control relies on the technical drawing, but these are often disrespected during construction, and there are not sufficiently independent, expert-led site visits being carried out (Reinoso et al., 2009[21]).

Policy response in Morelos

This evolution of Mexico's structural response to earthquakes over the past 30 years has had impacts in Morelos. On the one hand, the culture of preparedness and the national early-warning system, integrated into local schools and institutions, can be said to have prevented higher human losses from taking place. Infrastructural damage to buildings and networks was considerably lower than in the 1985 earthquake, which reflects better construction guidelines. On the other hand, the damage was still quite extensive; for instance, 86% of all state schools suffered structural damage. This reflects the limited enforcement of building regulations, the low quality of constructions and the weight of housing informality in Morelos.

Before the reconstruction process is presented, the emergency response deserves some attention. The state co-ordinated rescue actions with municipal civil protection authorities. Risk sites were isolated, the wounded were transferred to hospitals and health centres, and casualties were registered. A Safety Strategy was established, co-ordinated by the Morelos Interinstitutional Group. An Emergency Committee was created, and Emergency Operations Centres were installed in the 33 municipalities. In each municipality, a civil servant from the state government cabinet was appointed as liaison, to co-ordinate the disaster response.

To accommodate those affected by the disaster, 37 shelters were installed in 16 municipalities. A total of 2 649 people stayed overnight in the aftermath of the disaster. As of December 2017, 1 085 people were regulars of the remaining 17 shelters. The shelters counted with medical supervision and epidemiological surveillance. Psychological counselling services were also offered, including ludic activities for the youth. During the emergency, more than 964 tonnes of survival items were distributed, among food, water, blankets and clothes. Tools and materials to build temporary cover were provided. In addition, 24 soup kitchens and 5 collection centres were installed (2 in Cuernavaca and 1 in each of Zacapatec, Jojutla and Cuautla). Private foundations and NGOs contributed to the installation of temporary houses and classrooms.

Concerning the reconstruction process, the State of Morelos has delivered a broad and well-organised response to local needs. The decentralised agency *Unidos por Morelos* (United for Morelos) was created to co-ordinate the response to the crisis. This agency is responsible for prioritising actions related to reconstruction, co-ordinating efforts across levels of government, managing public funds with transparency and keeping an open communication channel with civil society. The strategy led by *Unidos por Morelos* consists of direct reconstruction of infrastructure and assistance to housing reconstruction, as well as financial support to entrepreneurs and firms to recover their businesses.

Reconstruction costs are estimated at USD 300 million, which correspond to around 20% of the annual state budget. The majority of costs refer to school and housing reconstruction needs (3 000 and 1 709 respectively). These costs are followed by public

building reconstruction (483) and roads (247). The sectors of urban infrastructure, health, sports, hydraulic and cultural heritage also require reconstruction. The costs will be borne by the federal state, via the FONDEN (USD 163 million), and the rest by the State of Morelos. Part of the state budget was reallocated to reconstruction efforts. Municipalities in Morelos were already in a frail fiscal situation, with many of them having required state aid to pay labour debts in 2016. With the emergency needs from the earthquake, the state had to boost the fund to municipalities, according to the Ministry of the Treasury.

The reconstruction process initiated with a diagnostic to assess the damages to the housing stock and public infrastructure. The diagnostic complemented the one carried out by national authorities in charge of the FONDEN. The diagnostic enabled the state authorities to accredit beneficiaries. At that stage, property owners were registered and their property ownership proofs were collected. Here, a problem could arise, given the dimension of housing informality in the state and in Mexico in general. The state accommodated for this situation by allowing residents to prove residence through water, electricity and telephone bills. Alternatively, the testimony of a neighbour could fulfil this need. The state also signed an agreement with notary public offices to provide free deeds for those who own land formally. The flexibility of the state in accommodating these needs has rightfully facilitated the process.

The package of benefits varied with the level of damage estimated, if total or partial. Partial damage entitled beneficiaries to construction materials, given in three scales, according to reconstruction needs, as measured in m². Beneficiaries were responsible for transporting materials from the distribution centre to their houses as well as for the repairs. Total damage qualified beneficiaries for financial assistance. In this, they had two options: receive the amount of USD 6 500 to spend as they wish or sign an agreement with a housing foundation. The value is higher in the latter case, once the foundations top USD 1 600, reaching a total of USD 8 100. Housing foundations were pre-assigned by *Unidos por Morelos* per municipality, but in municipalities in which more than one foundation is serving, the beneficiary can choose.[3]

The foundations build 50 m² houses, according to a pre-designed model. Houses have two bedrooms, one living room, one kitchen and one bathroom. The material used is *adobloc,* a type of clay brick that mimics the colonial architectural style. Beneficiaries only have some flexibility in what regards the façade, to which four options are given. But they can build additions to the houses in the future if wish so. Foundations promised to deliver new houses within 3 weeks of signing the agreement. Together with a new house, the beneficiary will receive the deed for the property. Land titling reduces informality rates and promotes greater tenure security.

Businesses are also receiving financial aid. The State of Morelos received funds from the National Institute of Entrepreneurs of Mexico (INADEM). As of December 2017, 3 359 commercial establishments had received non-repayable grants (Morelos, 2017, p. 96[17]). Other two programmes offered access to finance to 67 companies. In addition, the State of Morelos supports small businesses by acknowledging some of their material needs. More specifically, the state complemented FONDEN funds by covering reconstruction costs to those who owned a business in the ground floor of residential units. This type of mixed-use arrangement, often informal, is nonetheless the main income source for many families and contributes to the diversification of the local economy.

Concerning public infrastructure, the State of Morelos resorts to FONDEN funds, accessed via the Programme of Immediate Support (APIN), but also to its own funds. For instance, cuts in one state ministry funded the reconstruction of 9 cultural heritage sites

across the state, among museums, colonial farms and cultural centres. In addition, funds of USD 76.2 million were redistributed from the transportation project *Morebus*, after the project was cancelled. Funds have been used to repair hydraulic, agricultural, sports, road and educational infrastructure.

Going beyond reconstruction efforts, which are already challenging, the State of Morelos has to envision changes that will have impacts in the long-term. Besides the individual homes and repaired infrastructure, this is about how places can evolve from the disaster into a better, stronger state. To illustrate, territorial development in rural and urban areas can shape how places are structured to cope with disasters, as in the case of Jojutla.

Jojutla was the most strongly affected city by the earthquake in the state. Considering the major reconstruction efforts that would be needed, public authorities seized the crisis as an opportunity to launch a new plan for the urban development of Jojutla. The New Jojutla Plan (Plano Nuevo Jojutla) highlights a vision of the city in alignment with the 2030 Agenda and the New Urban Agenda. The goal is to promote a sustainable city on the principles of inclusion, gender equity, efficient use of resources, mitigation of climate change, as well as integral management of disaster risks.

The New Jojutla Plan has two main axes: service infrastructure and landscaping. Service infrastructure comprises the expansion of underground electrical wiring, water network, pluvial drainage and sewage system. The landscaping aspect concerns improving the image of Jojutla by building more and wider sidewalks, including accessibility elements such as ramps and vegetation around main streets and squares. Historical sites such as the municipal palace and the "Las Caritas" house will be restored and preserved. The accessibility aspect is also under consideration. Road connections to other cities in the state are being rebuilt. The bus station, completely destroyed, will be relocated to the edges of the city, in order to reduce the circulation of inter-municipal and inter-state buses in the historic city centre.

In all, Morelos has delivered quick, well-organised and well-structured policy responses. The fact that a single agency (*Unidos por Morelos)* was created to co-ordinate the state response favoured a more unified and coherent strategy, as well as communication with other stakeholders, including the national government. For better co-ordination, the state also allocated one cabinet staff per municipality as liaison. The state channelled and reallocated funds, having undergone significant budgetary cuts, too. The cancellation of the *Morebus* project, for instance, accounts for a considerable part of the costs that have to be borne by the state.

The comprehensive reconstruction efforts have therefore diverted significant state resources from previously agreed actions and programmes. With less financial resources, less personnel and an altered course of action, the State of Morelos has understandably invested less in other policy areas that are not directly concerned by reconstruction. In this sense, it is expected that the impacts of the earthquake will be also felt in what regards the progress of the OECD recommendations made in the Territorial Review. This aspect was fully taken into account for the analysis made in Chapter 2.

Transparency and Monitoring

Communicating with citizens and disseminating government decisions in a timely and transparent manner is fundamental to disaster response and recovery processes. The main strategies adopted by the State of Morelos regarding this matter were the publication of online information and the monitoring work done by the commission of evaluation of state policies COEVAL.

The State of Morelos is, as any other state, obliged to publish decisions and other acts in the Official Journal (*Tierra y Libertad).* The official journal renders acts public, which is a condition for their validity. In this sense, it operates as a mechanism of formal publicity of governmental decisions. That is to say, most citizens do not read the journal on a regular basis; it is a technical, lengthy and difficult document. Bearing that in mind, the state's proposal to share plans, reports and other information via the Official Journal in order to increase transparency is unlikely to bring positive results. Transparency requires more than the publication of documents, it involves making those documents easily accessible, understandable and shareable. In this sense, the State of Morelos has to move beyond the paradigm of official publication to invest in other means of communication with their citizenry, such as radio, website, social media, local newspapers and television.

The agency *Unidos por Morelos* publicises information online.[4] The website informs the state strategy for reconstruction and its rules of operation. It reports about damages and losses, beneficiaries and materials needed/ordered for reconstruction. The website does not contain sufficient information about the call for tenders to purchase materials and eventual hires by the agency. It covers basic access to information, but more detailed information about budget allocations and status of benefits is not available.

In these cases, the agency encourages citizens to communicate directly with them. They can go to the office of the Secretary for Controllership. They can also file complaints and suggestions to the reporting system *Buzón Ciudadano*.[5] Once a request or complaint is addressed, the state will report back within reasonable time, but the guidelines followed by the state to do so remain unclear.

In 2015, the State of Morelos created the State Commission for Evaluation (COEVAL).[6] It is a decentralised body of the Ministry for Social Development, responsible for monitoring and evaluating social policies and programmes developed by the State of Morelos and its 33 municipalities. The Commission has a technical committee, which is composed of a representative of the national commission (CONEVAL), the Executive President of the Citizenship Committee for Social Development, and seven members of civil society specialised and involved in matters of social development. Based on the results of the evaluations, the Commission shall develop recommendations to policy-makers on how to improve their programmes and policies. The Commission can also offer capacitation and training to policy-makers in what regards M&E of social policies.

The COEVAL is involved in the monitoring and evaluation of the strategy *Unidos por Morelos*, as set in the rules of operation of the decentralised agency. The evaluation process started with an exploratory diagnostic in 5 regions of the state, to collect primary data on socioeconomic status, living conditions before earthquake and level of satisfaction and corruption in the reconstruction process. Two evaluations will follow, one concerning the implementation process, and another one about the results of the strategy. The evaluations will be done through selected indicators, developed by COEVAL according to the methodology proposed by the national agency, CONEVAL.[7] The indicators enable an objective assessment of the strategy and facilitate communication and involvement of civil society in the process.

Some indications for the reconstruction process

This section offers some indications for the ongoing reconstruction process carried out by the agency *Unidos por Morelos.* As already stated, the process is being conducted in a broad, expedite and well-integrated manner. Still, some points deserve further attention. The state has the conditions to make the most out of the crisis and lead a reconstruction

process that, more than returning to the previous situation, can generate better infrastructure conditions and improve the quality of life of residents.

The State of Morelos has the opportunity to rethink urban development and planning. As the case of the Plan Nuevo Jojutla shows, reconstructions offer a strategic window of opportunity to improve the urban environment. In Jojutla, water, sewage and pluvial drainage networks will be renovated and expanded. Landscaping projects will include larger sidewalks, new urban furniture and redesigned squares. In this sense, urban plans that better reflect infrastructure needs, make the city more walkable, preserve the historic heritage and promote collective transportation modes and energy-efficient buildings can bring considerable improvements for well-being and sustainability. These changes should be promoted in other municipalities as well. The Secretary for Sustainable Development, who is overseeing the process in Jojutla, could expand its field of action or at least offer its expertise to other municipalities.

The resettlement of those affected by the earthquake ought to remain a priority in spatial plans. That is, plans for urban development cannot reduce the offer of housing or prevent affected people from moving back to their original area of residence, as long as it is reputed safe to live. It is recommended that spatial plans include risk assessment analyses and maps of risk levels by type of hazard. Specific budget allocations should be directed to facilitating building communities within relocation sites, integration with surrounding neighbourhoods, and care for children and elderly's mental health. It is often the case that such funds are simply not designed to be spent for such purposes.

Given reconstruction needs, some thought should be given to location. It is important that housing projects are well-connected to public transportation networks, with special attention to the needs of the children, women and elderly. Housing development has often been disconnected with public transport in Mexico, which can reduce mobility and accessibility levels, and increase congestion and air pollution (OECD, 2015[22]). In all, the government needs to strike a balance between the imperatives of swift reconstruction, and the opportunities to make urban development more sustainable and inclusive.

Housing reconstruction via private foundations titling can be considered a safe and sound option. It is expected that the 7 410 new houses will be safe and will have clear, formal land rights, as the principle of *Build Back Better* instructs (UNISDR, 2015[23]). The broad range of foundations involved should guarantee fast construction while maintaining quality. The state should make sure the foundations abide by employment regulations and make use of environmentally sound construction materials. They should monitor if funds are being rightfully spent and if the project timeline is being respected.

Moreover, the agency *Unidos por Morelos* should closely monitor the technical conformity of constructions. The sub-committee on housing construction already sets up technical aspects and approves construction plans; it should also monitor if these are actually being respected during construction. Monitoring if building regulations are being followed is admittedly one of the central problems concerning urban planning in Mexico (Reinoso et al., 2009[21]). It has been reported that the disconformity between the technical drawing submitted to the public authority and the actual construction often exists and can only be checked by site visits, which are costly and complex to carry out (Reinoso et al., 2009[21]).

As of the site visits in December 2017, housing construction had just started. Displaced people were either living in campsites or with relatives. This situation, even though temporary by nature, should not persist for much longer. Special attention should be paid to the elderly, those with disabilities and children. International recommendations instruct

that the most vulnerable groups should be relocated first. The *Guidelines for Mainstreaming the Needs of Older Persons in Disaster Situations,* for instance, state that the elderly should be given priority in housing programmes (PAHO, 2012[24]). Programmes should assist them in restoring their livelihoods as well (PAHO, 2012[24]). To illustrate, those who live off cash crop gardens, variety shops or informal restaurants would need enough room in new houses to continue doing so.

Another aspect of housing that bears consideration is multifamily housing. Contrarily to FONDEN regulations, state guidelines account for the situation of more than one nuclear family living under the same roof. Nonetheless, it is not clear how this will be operationalised. For instance, it may be the case that each household unit is listed as a separate beneficiary, receiving thus each one a house; or if they have to split the financial assistance, making ends meet to build new houses with that amount.

In the property registry process, the state should beware of pre-existing rights. That is, in order to grant formal ownership rights to beneficiaries, the state should verify who the registered owner of land is, especially if it is private. In any event, it is important that the new title lawfully supersedes any eventual pre-existing title, to avoid future land conflicts. In addition, tenure security of beneficiaries will be higher if they perceive that the land title can subsist against future claims.

Still regarding property registry, the state should promote women's tenure security. The ownership rights should be jointly attributed to both female and male heads of the household. In case of any impediment in this regard, ownership rights should be preferentially attributed to the female head of the household. Women's tenure security should be protected regardless of marital status, group membership, ethnicity or race. This recommendation echoes several United Nations international guidelines on housing relocation and restitution (OHCHR, 2007[25]; Rolnik, 2014[26]).[8]

Those who opt for financial compensation should receive technical assistance to rebuild their homes. The course of self-construction offered by the ICATMOR can complement but not replace this demand. *Unidos por Morelos* should offer technical assistance for housing construction. This assistance service has to be regular, inexpensive and flexible to accommodate varying needs by residents. Self-construction is often deployed by those with scarce financial means or changing family arrangements – being thus quite common in Mexico, but not only. Self-construction can offer more flexibility to define the house layout, the pace of works and even the materials used. For these reasons, self-construction should be regarded as a valid alternative for reconstruction, as long as technically sound.

Ensuring safety in reconstructing schools, hospitals, fire stations and public buildings must be a priority. In particular, the issue of school reconstruction merits attention, given that 86% of schools suffered partial damage and 36 schools will have to be completely rebuilt. It is true that Mexico has two programmes on school safety against disasters, and that the National Institute of Educational Physical Infrastructure (INIFED) conducts several thousand visits per year to assess the vulnerability of schools (OECD, 2013, p. 20[19]). In addition to following these programmes, it is advisable that Morelos adopts specific guidelines of school reconstruction under a disaster risk management paradigm. The International Finance Corporation of the World Bank developed guidelines in that direction. The guidelines advise about structural and non-structural safety, and contain emergency planning measures, too (IFC, 2010[27]). The checklist for disaster readiness and resilience can be particularly useful (Box 3.1).

Box 3.1. School Disaster Readiness and Resilience Checklist

1. School Disaster Management Committee guides the School Disaster Management Process

- An existing or special group representative of all parts of the school community is tasked with leading school disaster management efforts on an ongoing basis.
- School disaster management has the full support of school leadership.
- School disaster management committee takes lead in ongoing planning for prevention, mitigation, response and recovery.
- School disaster and emergency management plan is reviewed and updated at least annually.

2. Assessment and Planning for Disaster Mitigation Hazards, vulnerabilities, risks, capacities and resources are researched and assessed.

- Mitigation measures are identified and prioritised for action.
- Building evacuation routes and safe assembly areas are identified.
- Area evacuation and safe havens for family reunification are identified, as needed.
- Educational continuity plans are in place for recurring hazards and high impact hazards

3. Physical protection measures are taken to protect students and staff

- School buildings and grounds are maintained for disaster resilience.
- Fire prevention and fire suppression measures are maintained and checked regularly.
- Safety measures related to building non-structural elements, furnishings and equipment are taken to protect students and staff from hazards within the building (especially caused by earthquakes, severe weather etc.).

4. School personnel have disaster and emergency response skills and school have emergency provisions

- School personnel are ready to organise disaster response using a standard emergency management system (e.g. incident command systems).
- School personnel receive training in a range of response skills including, as necessary: building and area evacuation, first aid, light search and rescue, student supervision, shelter, nutrition and sanitation.
- School maintains first aid supplies and fire suppression equipment.
- School maintains emergency water, nutrition and shelter supplies to support staff and students for a minimum of 72 hours.

5. Schools have and practice policies and procedures for disasters and emergencies

- Policies and standard operating procedures adopted to address all known hazards.

- Standard operating procedures include: building evacuation and assembly, shelter-in-place, lockdown, and family reunification procedures.
- School personnel have and practice procedures to ensure safe student reunification with emergency contacts identified in advance by parents or guardians.
- School drills are held at least twice yearly to practice and improve upon disaster mitigation and preparedness skills and plans.

Source: IFC (2010), *Disaster and Emergency Preparedness: Guidance for Schools, World Bank*, Washington, DC, http://hdl.handle.net/10986/17669.

In conclusion, this section presented key indications for how Morelos can move forward, within the existing reconstruction strategy. The focus here was on what is possible to adjust given what is being done. The following section will address actions that the State of Morelos can take in complement of the current strategy. It presents instruments that Morelos could adopt in order to enhance preparedness for the future. These instruments are an indication for action, and as such, they would have to be further adapted to Morelos' context in order to become operational.

Risk governance: key aspects for Morelos

As abovementioned, this section provides guidance on how Morelos can emerge from the reconstruction and recovery process into a more resilient state. Following previous OECD work on risk governance and in alignment with international frameworks of Disaster Risk Reduction (DRR) and resilience, the section touches upon key institutional aspects that could be further developed by the State of Morelos to increase preparedness and improve response in the event of disasters. It does not offer a single, universal strategy for DRR but indicates pathways for action. These aspects are disaster reduction management planning, emergency planning, risk-based spatial planning, housing informality, financial resilience, data collection, and accountability and transparency in risk governance.

These aspects can be developed throughout the risk governance process. Risk governance is about governing disaster risk, beyond merely reacting to disasters. The main objective of the risk governance process is to create an integrated, multi-risk and participatory strategy to disaster risk. This process, as understood by the OECD (2014[28]),[9] includes different steps to understand, prepare for and react to disasters and shocks (Box 3.2). The steps may occur in parallel, not necessarily in a linear fashion. For instance, the adoption of structural protection measures does not always precede knowledge-sharing efforts; they may even occur at the same time. Some plans and policies may need to be reviewed or updated, while other steps have already been implemented. This process also requires a certain way of doing things, such as communication, transparency, accountability, broad consultation with civil society and such, which the third part of this section discusses.

Box 3.2. The risk governance process: Key recommendations

I. Establish and promote a comprehensive, all-hazards and transboundary approach to country risk governance to serve as the foundation for enhancing national resilience and responsiveness.

1. Develop a national strategy for the governance of critical risks.
2. Assign leadership at the national level to drive policy implementation, connect policy agendas and align competing priorities across ministries and between central and local governments.
3. Engage all government actors at national and subnational levels, to co-ordinate a range of stakeholders in inclusive policy-making processes.
4. Establish partnerships with the private sector to achieve responsiveness and shared responsibilities aligned with the national strategy.

II. Build preparedness through foresight analysis, risk assessments and financing frameworks, to better anticipate complex and wide-ranging impacts.

1. Develop risk anticipation capacity linked directly to decision making.
2. Equip departments and agencies with the capacity to anticipate and manage human-induced threats, criminal and terrorist networks.
3. Monitor and strengthen core risk management capacities.
4. Plan for contingent liabilities within clear public finance frameworks by enhancing efforts to minimise the impact that critical risks may have on public finances and the fiscal position of a country in order to support greater resilience.

III. Raise awareness of critical risks to mobilise households, businesses and international stakeholders and foster investment in risk prevention and mitigation.

1. Encourage a whole-of-society approach to risk communication and facilitate transboundary co-operation using risk registries, media and other public communications on critical risks.
2. Strengthen the mix of structural protection and non-structural measures to reduce critical risks.
3. Encourage businesses to take steps to ensure business continuity, with a specific focus on critical infrastructure operators.

IV. Develop adaptive capacity in crisis management by co-ordinating resources across government, its agencies and broader networks to support timely decision making, communication and emergency responses.

1. Establish strategic crisis management capacities to prepare for unknown and unexpected risks that provoke crises.
2. Strengthen crisis leadership, early detection and sense-making capacity, and conduct exercises to support inter-agency and international co-operation.
3. Establish the competency and capacities to scale-up emergency response

capabilities to contend with crises that result from critical risks.

4. Build institutional capacity to design and oversee recovery and reconstruction plans.

V. Demonstrate transparency and accountability in risk-related decision making by incorporating good governance practices and continuously learning from experience and science.

1. Ensure transparency regarding the information used to ensure risk management decisions are better accepted by stakeholders to facilitate policy implementation and limit reputational damage.
2. Enhance government capacity to make the most of resources dedicated to public safety, national security, preparedness and resilience.
3. Continuously share knowledge, including lessons learnt from previous events, research and science post-event reviews, to evaluate the effectiveness of prevention and preparedness activities, as well as response and recovery operations.

Source: OECD (2014), *Recommendation of the Council on the Governance of Critical Risks*, www.oecd.org/gov/risk/Critical-Risks-Recommendation.pdf.

Planning instruments

The basic planning instruments for DRR and resilience are: territorial risk assessments, risk-based land use plans and emergency response plans (Table 3.1).

Table 3.1. Planning instruments

Risk assessment	Risk assessment is a tool of risk management that informs about previous disaster events and estimates the impacts of future shocks. This detailed record-keeping helps city leaders to identify the risks that the city is most often subject to, at which frequency, in what territories and at what levels of loss. It also aims at better predicting the future, by quantifying the probability and impacts of hazards.
Risk-based land-use planning	Risk-based land-use planning is a non-structural approach that identifies the safest locations and regulations for guiding urban development. Land-use plans influence the location, type, design, quality and timing of development. The plan is a reference for taking decisions about ordinances and permits, as well as allocating finances.
Emergency response plan	Emergency response plans have both operational and logistical components, including procedures for damage and needs assessment after a disaster. An emergency response plan should identify patterns for stakeholder co-ordination, both horizontally with local actors and vertically with regional and national authorities.

Source: Jha, A.K., T.W. Miner and Z. Stanton-Geddes (eds.) (2013), *Building Urban Resilience: Principles, Tools, and Practice*, http://dx.doi.org/10.1596/978-0-8213-8865-5.

The national government has adopted these planning instruments for disaster risk management and resilience, as exemplified by the Risk Atlas (*Atlas del Riesgo),* the *Plan Sismo,* the SASMEX system and the SAVER tool. Most of these instruments can and ought to be replicated at the state and municipal levels. Yet this has proven to be a difficult task: subnational governments often face limited financial and technical capacity to elaborate, adopt and implement such instruments (OECD, 2013[19]).

The early-warning system of Morelos is connected to the national SASMEX system and the SAVER tool, through stations installed in public research centres. Regarding emergency response planning, Morelos has just approved a new Civil Protection Statute. The Statute fosters the culture of preparedness and is aligned with federal legislation in the matter. Morelos needs to continue incorporating strong mitigation and preparedness measures, among which emergency and contingency plans are a crucial step. In that, Morelos can refer to guidelines issued by the national authority of civil protection (SEGOB – National Co-ordination of Civil Protection).[10]

Territorial risk assessment allows mapping to which risks the territory is subject and to plan accordingly. In Morelos, it was carried out through the Risk Atlas of 2010. Despite being relatively recent, it does not contain important elements such as seismic risk. After the earthquake, the Ministry for Sustainable Development committed publicly to update the Risk Atlas in this direction. The state has urged the 33 municipalities to develop their own risk atlases but there has been little follow-up. The state could provide training for local agents on how to conduct multi-hazard assessments. For financial matters, the state could facilitate access to federal funds, or provide grants for municipalities to carry out such studies. These studies would complement the state's Risk Atlas, offering a more thorough view of vulnerability in the territory as a whole.

The risk atlases and early-warning tools could have more impact if incorporated into land use planning. The 2012 General Law for Civil Protection requires the development of risk atlases to inform land-use plans (OECD, 2013, p. 96[19]). Mexico's civil protection laws provide a legal basis to move beyond the traditional focus of emergency preparedness, response and recovery, calling for comprehensive disaster risk reduction and prevention. Implementation of the 2012 General Law on Civil Protection provides an opportunity to strengthen co-operation and better align sub-national programmes with federal policies (OECD, 2013, p. 15[19]). In conclusion, Morelos should align its programmes with the 2012 General Law on Civil Protection, update the Risk Atlas, and incorporate the dimension of risk assessment provided in the Risk Atlas into land use planning documents.

Furthermore, the impacts of the earthquake were strongly felt in the urban infrastructure, revealing structural deficiencies in housing quality, schools and heritage conservation. This signals weaknesses in building codes and their enforcement. In light of this context, the building codes should be reviewed, to reflect the latest technical requirements against earthquakes and other risks. At the same time, this should not mean creating rigid construction patterns that excessively burden constructors. The state could create risk profiles with scales that vary according to the desired configurations and uses for the building. This model could be more flexible and potentially facilitate monitoring.

In addition, assessing seismic risks to existing schools, hospitals and public buildings could be carried out as a pilot programme to demonstrate Morelos's commitment to long-term resilience. A number of OECD and non-OECD countries have carried out such assessment (Box 3.3). In Japan, the government promotes assessment of earthquake-resistant structure of existing buildings retrofitting the buildings whose earthquake-resistant level is assessed insufficient (OECD, 2015[22]). Such measures were introduced in 1995, after the Kobe Earthquake and gradually elaborated. Most recently, after the Great East Japan Earthquake (2011), assessing and reporting earthquake-resistant structure has become mandatory for certain large-scale buildings (e.g. schools, hospitals).

Box 3.3. Cases of Probabilistic Seismic Risk Assessment

Peru: Understanding seismic risk to schools in Lima

The Ministry of Education, in partnership with the World Bank and GFDRR, is working to mitigate against damage, protect students against the impact of earthquakes, and safeguard educational development. A probabilistic seismic risk assessment was conducted by the World Bank, focusing on 1 969 schools in the Lima Metropolitan Area.

According to the assessment, only 8% of schools complied with seismic resistance design codes, and 64% of schools were highly vulnerable to earthquakes, leaving 600 000 children at risk. Based on these results, the Government has introduced a national school infrastructure plan focused on improving the amenity of school infrastructure and on reducing potential seismic vulnerability for the 252 most vulnerable school facilities, with an estimated USD 17 million investment.

Turkey: Reducing seismic risk to public buildings

Turkey has substantial seismic risk and vulnerable building stock. A seismic risk analysis in 2002 suggested that in earthquakes of magnitude 6.9 to 7.7, some 7%-8% of buildings would be heavily damaged, 87 000 people could be killed, and 135 000 severely injured. Istanbul's schools, hospitals and other public buildings had a high potential for collapse. The assessment recommended urgent review and retrofits of 635 hospitals and 2 000 schools, and the creation of a disaster management centre and educational programmes to raise awareness.

In 2012 the Istanbul Metropolitan Municipality and the Government of Turkey used these recommendations as a basis for the Istanbul Seismic Risk Mitigation and Emergency Preparedness Project (ISMEP). The project has improved seismic resilience in Istanbul through better emergency preparedness, reduced risk at over 700 public facilities and made improvements in building code enforcement.

Source: UNISDR (2017[291]), *National Disaster Risk Assessment: Governance System, Methodologies and Use of Results*, available at https://www.unisdr.org/files/52828_nationaldisasterriskassessmentwiagu.pdf (Accessed at July 16 2018).

Housing and finance instruments

Informal housing may represent a burden to residents and the state. Residents suffer from unsanitary and unsafe living conditions, tenure insecurity and limited access to credit. Beyond state responsibility for human rights violations, in a very pragmatic sense states lose from informality. For one, tax collection revenues are diminished. States also have more responsibility for and less control of the urban environment. For instance, because most informal houses do not have insurance, in the tragic event of natural disasters the burden lies on the state, not on insurance companies, as it occurs with formal housing. Disaster risk financing and insurance instruments can protect against the financial impacts of natural disasters but do not reduce the amount of damage and loss. For these reasons, promoting resilience in Mexico forcefully means addressing the issue of informality.

Property registry is a necessary aspect of this process, too. First, property registry systems tend to be outdated and incomplete. This reflects poorly for the purposes of adequately

assessing the size and needs of the housing market, planning for urban development and collecting taxation. This task is on its own gigantic, but with new land titles being distributed it becomes more urgent. Only by enjoying tenure security residents can access and pay tariffs and taxes for public services and land ownership.

Formal housing would pave the way for increased financial protection. The State of Morelos can tap into risk finance models, as they offer more security to residents while reducing the potential financial burden that the state would have to carry in the event of another disaster. Risk retention, risk financing and risk transfer instruments should be selected to cover disasters of different frequency and severity. Examples of instruments are risk pools, reserve funds, weather derivatives, indemnity-based reinsurance, parametric insurance and catastrophe bonds (Box 3.4). Affordable insurance schemes can too be designed to encourage the adhesion of newly formalised settlements.

Box 3.4. Examples of risk transfer programmes

Turkey: Turkish Catastrophe Insurance Pool (TCIP)

The ever-present threat from widespread earthquake damage led to the creation of TCIP in 1999. TCIP provides earthquake and fire insurance coverage at affordable yet actuarially sound rates for registered urban dwellings, limits the Government's financial exposure to loss, builds long-term catastrophe reserves and encourages risk reduction and mitigation practices in residential construction. During the first five years, the World Bank provided a contingent credit layer that would have provided capital relief should there be a shortfall as a result of claims activity. Reinsurance cover per event is purchased through various layers. Current market penetration is around 34% (approximately 5.6 million policies), with an average premium per policy of EUR 59.

India: Telenor Suraksha Micro-insurance

In September 2015, Telenor India launched Telenor Suraksha, India's first mass-market life insurance product, in partnership with MicroEnsure, a leading United Kingdom-based microinsurance specialist, and Shriram Life Insurance. Cover is offered via Telenor's network of 48 million customers, who can sign up when topping up their phones. The electronic registration process is simple and no paper policy document is required. Cover is offered without exclusions and is offered for free for a certain amount of airtime usage as a reward to loyal subscribers. Education on the benefits of insurance is made through marketing materials, text messages (SMS) and a phone menu that provides all the information required. Claims are paid using mobile money. Within 148 days, more than 22 million customers had opted for the programme, with most of these people living in rural areas. Over 95% of customers had never had any form of insurance previously.

Sources: UNISDR (2017[29]), *National Disaster Risk Assessment: Governance System, Methodologies and Use of Results*, available at https://www.unisdr.org/files/52828_nationaldisasterriskassessmentwiagu.pdf (Accessed at July 16 2018).

Risk governance instruments

The risk governance process contains a strong procedural element. As much as planning, housing and finance instruments are important, *how* to design and implement them is a crucial issue. This involves four main elements: data collection, training and awareness, community participation and transparency and accountability (Table 3.2 and Box 3.5).

Table 3.2. Instruments for better risk governance

Data collection	Promoting data accessibility is an important component of any technical disaster or climate risk project. To ensure sustainability of project results, all data collected and created should be preserved, consolidated and transferred to stakeholders upon project completion in a well-known or standard electronic format.
Training and awareness	Capacity development is the process by which people, organisations and society systematically stimulate and develop their capacities over time to achieve social and economic goals. It involves learning and various types of training, but also continuous efforts to develop institutions, political awareness, financial resources, technology systems and the wider enabling environment.
Community and stakeholder participation	Participation of communities and other stakeholders in urban programming and planning initiatives enhances urban resilience. It is vital to ensure that vulnerable and marginalised populations are full and meaningful participants in all processes. It can also be fostered via multi-sector and multi-level partnerships with government and civil society, including community-based organisations, the private sector and academia.

Source: Jha, A.K., T.W. Miner and Z. Stanton-Geddes (eds.) (2013), *Building Urban Resilience: Principles, Tools, and Practice*, http://dx.doi.org/10.1596/978-0-8213-8865-5.

In the case of Morelos, the agency responsible for the reconstruction strategy is collecting and systematising data. In addition, this data should be digitalised, publicised in their online portal, and transferred to the state once the mandate of the agency is concluded. The state commission COEVAL can also lead taskforces to collect and consolidate data. Moreover, these two bodies could be responsible for organising training sessions to form local leaders that are informed about disaster recovery strategies and can further replicate this knowledge in their communities. Another important aspect of training is to develop capacities of civil servants to access and update risk atlases, together with other technical documents of disaster risk management planning.

As mentioned above, the state oversees activities of shelters and distribution centres. But the state should also monitor the housing foundations, regarding the efficiency of public spending and the technical quality of constructions. Civil society groups that can support and strengthen the monitoring processes would be welcomed in the future but seem to be absent from the current process. Empowering citizens, especially vulnerable groups, to publicly lead and promote fair and inclusive reconstruction process is fundamental.

Box 3.5. Accountability and transparency is disaster risk governance

Public institutions are accountable for managing and communicating risk. Creating and enforcing the accountability of city and municipal governments to effectively manage and communicate risk can be challenging, in part because it requires a perspective that stretches beyond elected terms. Some decisions and resources also are beyond local control, at regional or national levels, or beyond their jurisdiction. A combination of measures is needed to ensure that local government is accountable for the safety of its citizens, namely:

- Adoption and enforcement of a legal and institutional framework—including performance goals—for disaster and climate-related risk management, in co-operation with civil society, the private sector, and regional and national governments.
- Promotion of meaningful participation by community and other interest groups in the design, delivery, and monitoring of disaster and climate-related risk management, including the use of such tools as social audits.
- Clear delineation of the responsibilities of all levels of government and civil society actors for disaster and climate-related risk management.

Source: Jha, A.K., T.W. Miner and Z. Stanton-Geddes (eds.) (2013), *Building Urban Resilience: Principles, Tools, and Practice*, http://dx.doi.org/10.1596/978-0-8213-8865-5.

Notes

[1] To a more complete analysis of the system of civil protection in Mexico, including a more throughout analysis of FONDEN and the 2012 National Law of Civil Protection System, please refer to OECD (2013[19]).

[2] The National Risk Atlas is available online at www.atlasnacionalderiesgos.gob.mx.

[3] The foundations are the following: *Centro Cooperativo Tapalehui, Fundación Carlos Slim, Fundación Vivienda – Fideicomiso Proviváh, Fundación Azteca, Fundación Ofakim* and *Fundación ¡Échale! a tu casa.*

[4] Via: http://unidospormorelos.com.

[5] Via: http://buzon.transparencia.unidospormorelos.com/.

[6] Governor's decree published in 07/22/15 at the Official Journal of the State, "Tierra y Libertad", no. 5308.

[7] *Metodología de Marco Lógico para la Construcción de Indicadores de Resultado CONEVAL – CEPAL*: http://coeval.morelos.gob.mx/DocuentosMIR/MML.

[8] The Handbook *Housing and Property Restitution for Refugees and Displaced Persons: Implementing the 'Pinheiro Principles'* (OHCHR, 2007[25]) states, in Principle 4.2: "States should ensure that housing, land and property restitution programmes, policies and practices recognise the joint ownership rights of both male and female heads of the household as an explicit component of the restitution process, and that restitution programmes, policies and practices reflect a gender-sensitive approach." The UN Special Rapporteur on Adequate Housing, on the *Guiding principles*

on security of tenure for the urban poor (Rolnik, 2014[26]), affirms that: "Both de jure and de facto gender equality are essential to the enjoyment of the right to adequate housing. In this regard, States must strengthen and protect women's security of tenure, regardless of age, marital, civil or social status, and independent of their relationships with male household or community members".

[9] The OECD framework, originally designed for the national level, can be easily adapted to subnational governments.

[10] The *Guía para la elaboración de Programas de Protección Civil y Planes de Contingencias* is available at: http://www.proteccioncivil.gob.mx/en/ProteccionCivil/Guia_para_la_elaboracion_de_Programas.

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Chapter 4. Transport and logistics strategy of the State of Morelos

This chapter discusses the issue of logistics, in view of the project of railroad rehabilitation and construction near the industrial park of the metropolitan area of Cuautla. The railroad is likely to carry a significant volume of goods and materials, which will be directly linked to the manufacturing pole. Some recommendations for the future are provided, in order to consolidate this project, enhance road safety and promote accessibility in general.

Introduction

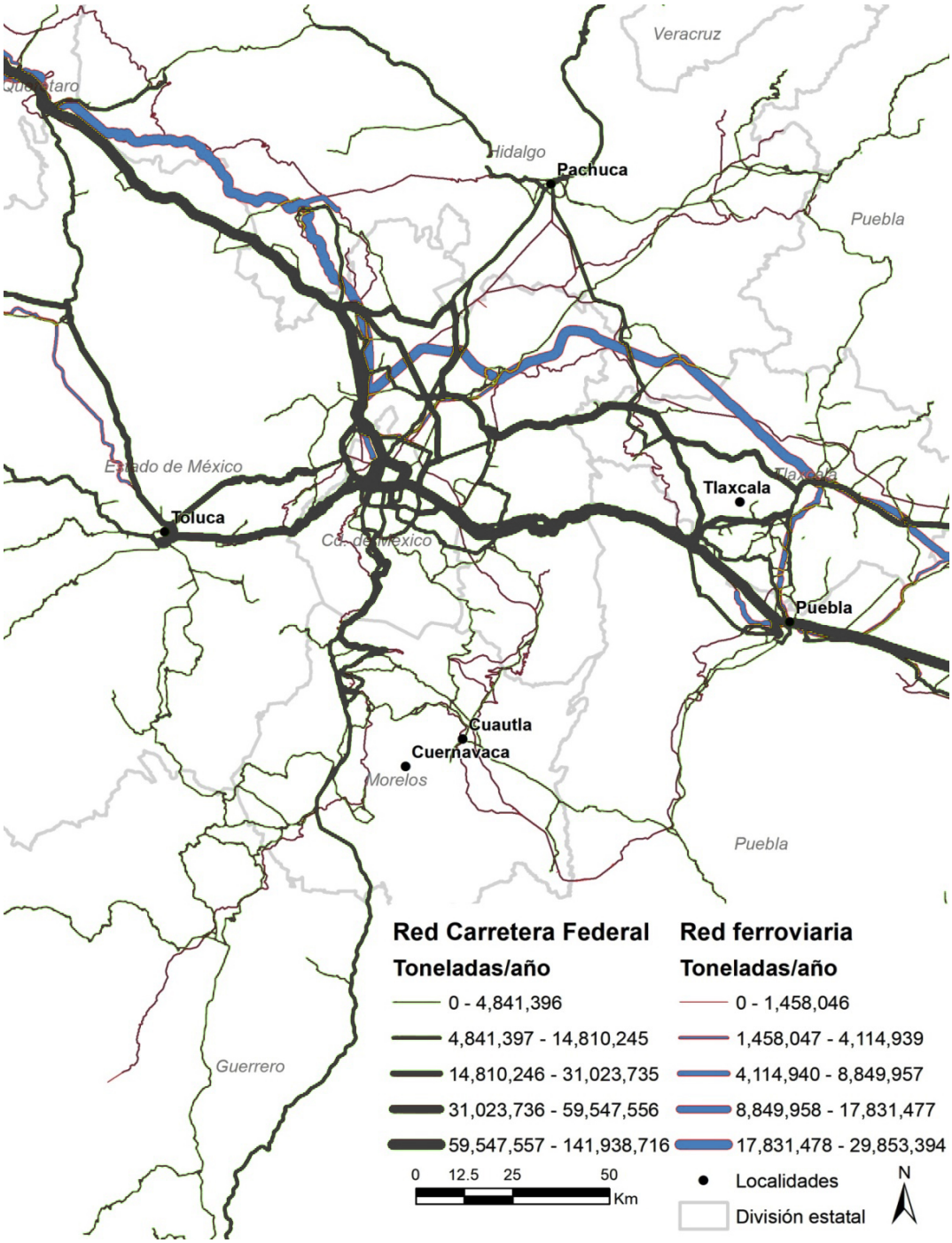
The economic development strategy of the State of Morelos is centred on the labour market with a focus on improving productivity through education in schools and universities and through vocational training. One of the aims is to support the development of industry in Morelos and add to inward investment that already includes significant investment in the automotive sector with Nissan, Bridgestone and Continental plants. The second strand of policy is to invest in transport infrastructure to improve connectivity both inside the State and with the national highway and rail networks. The objective is to reduce transport costs for businesses based in Morelos, expand the market for local producers and achieve better integration with centres of production and consumption across Mexico.

The *Autopista del Sol* running through the State capital Cuernavaca is a key north-south federal highway running from Mexico City to Acapulco and to Oaxaca, Chiapas and the southern border of Mexico. It has been improved over the last five years with Federal funding for the expansion of the Cuernavaca bypass and a bypass at Tlalpan in the south of Mexico City. Federal funding has also been attracted to strengthening east-west road connections, particularly the link eastwards from Cuernavaca and Cuautla (the third largest municipality in the state) south-east and then northeast to Puebla, Mexico's fourth largest municipality. Improvements to this route continue with the expansion of the La Pera-Cuautla section of the highway. This has been controversial, as while the connectivity benefits are substantial so is the damage to a sensitive environment, as the road cuts through the historical town of Tepoztlán. These roads are clearly visible on Figure 4.1, given the volume of freight transported on them. They also carry heavy passenger traffic. Complementing these Federal projects, State funds from the Government of Morelos have been used to improve road links between a number of municipalities in Morelos, together with investment in regional airports.

Morelos has 259 km of rail alignments according to Promedia, most disused (black lines in Figure 4.1). The state is making a significant investment to rehabilitate a 103 km link from the Cuautla industrial park north to the municipality of La Paz, in the south-east of the Mexico City conurbation. Here it will join the Ferrosur/Ferromex mainline network (black line running north from Cuautla in Figure 4.2). Seven kilometres of line in Cuautla have been rebuilt to date.

Whilst track and sleepers have been removed over most of the route through theft over the years, the alignment has been preserved. As well as serving plant in the industrial park, the government hopes the rail line will serve agricultural business shipping produce from Morelos and result in the development of an intermodal container park, substituting rail for some freight transport on the roads. The fundamental goal is to create a pole for economic growth in Cuautla. Shifting freight from road to rail in the interests of road safety is an important secondary objective.

Figure 4.1. Volume of freight transported on the road (grey) and rail (blue) networks of Morelos and central Mexico (Tonnes per year, 2016)



Source: Instituto Mexicano de Transporte.

National Logistics Strategy

Strategic planning for logistics in Mexico is based on the National Development Plan for 2013-18 and the *Programme for the Communications and Transport Sector.*[1] The objectives of the programme are to:

1. Develop transport and multi-modal logistics infrastructure that provides for competitive costs and improved safety and drives economic and social development.
2. Provides for adequate, efficient and safe logistics and transport services that increase the competitiveness and productivity of economic activities in Mexico.

Initiatives under the programme include a National System of Logistics Platforms (NSLP), under joint development by the Secretariat of Communications and Transport (SCT) and the Secretariat of Economy with support from the Inter-American Development Bank. Preparatory work has identified strategic logistics nodes across the country (Figure 4.2), proposing 85 logistics platforms of different types for each of the nodes and outlining public policies to develop them. Cuernavaca/Cuautla is identified for development as a regional logistics node.

The NSLP initiative is underpinned by modelling of freight movements undertaken by the Instituto Mexicana del Transporte (IMT) to identify the volumes of traffic carried on the highway and rail networks, section by section (see Figure 4.1 and Figure 1.4). As Figure 4.1 reveals, the highway between Mexico City and Cuernavaca is one of the most heavily trafficked roads in the region, only the roads to Puebla, Queretaro and Toluca carry more freight.

Figure 4.2. Strategic Logistics Nodes

Source: SCT, SE and IDB (2013[30]), Sistema Nacional de Plataformas Logísticas (SNPL), available at: http://logisticsportal.iadb.org/sites/default/files/presentacion_sistema_nacional_de_plataformas_logisticas.pdf

The investments in improving connectivity in Morelos will all show a return on investment under cost-benefit assessment. As is typical in middle-income countries, the number of road investments with strongly positive benefit-cost ratios greatly exceeds the capacity to fund projects. A high hurdle rate of return on investment can be used to select projects and establish priorities between similar projects serving similar purposes and is applied by the Federal government for the funding or infrastructure investments. However, allocating public resources between dissimilar projects – highways versus rail or highways versus rural roads – can only be done on the basis of a broader strategy (ITF, 2011[31]). Under cost-benefit assessment, investments in relieving congestion on a busy highway will always show a much higher return than investments to develop connectivity in rural areas, for example by building surfaced all-weather roads to replace unsurfaced roads.

The productivity and connectivity strategy developed by Morelos appears appropriate to allocating the relatively modest sums of State (as opposed to Federal) budget to be spent on road and rail investments. In future elaborations it would nevertheless benefit from examination of the data on traffic and modelling of freight flows available from IMT (Figure 4.2 and Figure 4.4).

More broadly, a public statement of the economic rationale underlying public investments in logistics and transport infrastructure would be useful for providing the basis for a stable consensus on priorities for the use of State funds in projects that often have long lead times. Existing policy documents include much detail on the individual transport investments to be made but little or no discussion of how priorities for investment are established or assessment of value for money from public expenditure (see for example the *Programma Estatal de Gestión del Riesgo y Ordamiento Territorial Estado de Morelos*).

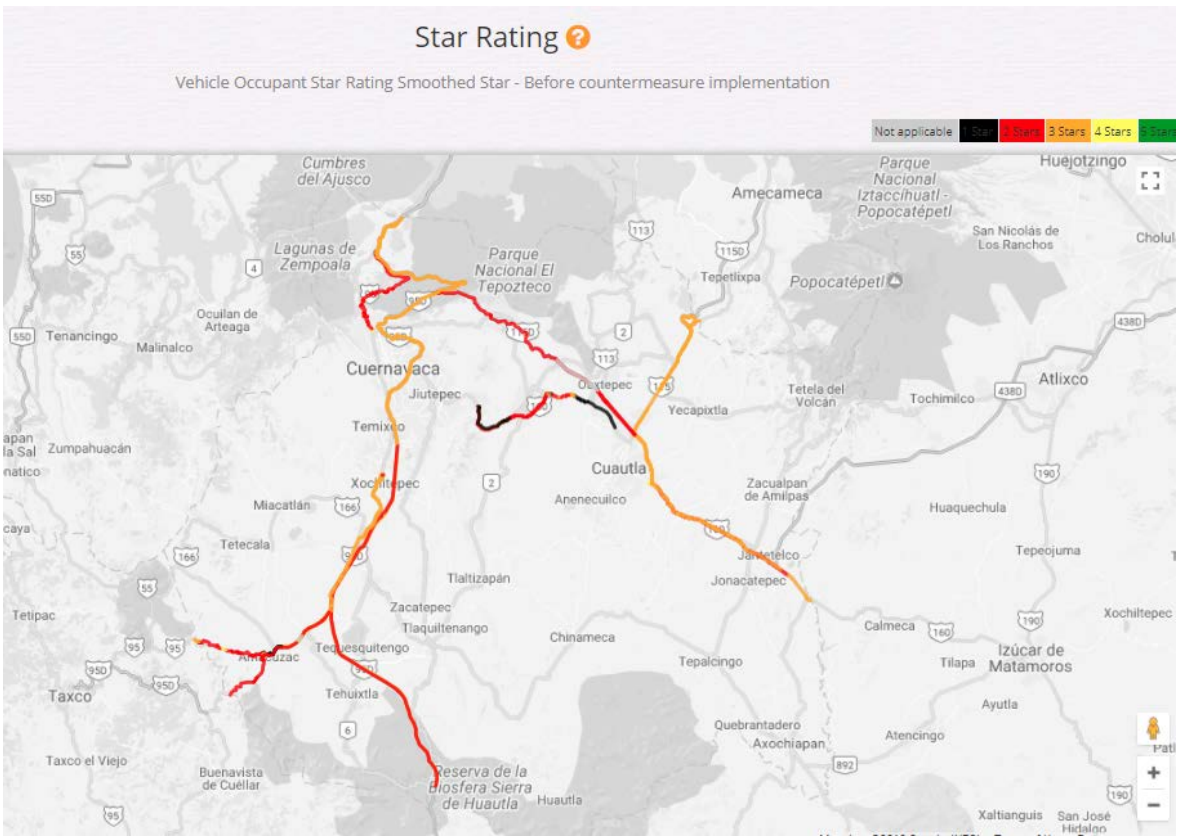
IMT and the National Statistics Office (INEGI) are developing data and indicators to support the freight logistics strategy under the National Development Plan with funding from the National Science and Technology Council (CONACYT) and IMT is working on the establishment of a national logistics observatory. This initiative was reviewed by the OECD in 2016, which recommended focusing on a number of indicators highly relevant to policy in Morelos (OECD/ITF, 2016[32]). The Government of Morelos might work with IMT and with the railways to develop pilot indicators related to the State's connectivity strategy. Areas of particular relevance for the development of empirical data and quantitative indicators to support policy making are as follows.

- Road congestion is perennially an issue of high interest to road users, both logistics and freight transport business and the general public. Developing transparent indicators can help focus attention where congestion costs are largest. The Urban Mobility indicators developed by the Texas Transportation Institute, average hours delay and a comparative travel time index, might provide a model to follow (TTI, 2017[33]).
- Road safety is an important policy issue but data on killed and seriously injured and exposure to crash risks are currently dispersed in Mexico. IMT collects data on Federal roads; the States collect data on other roads; CONAPRA under the Ministry of Health estimates road deaths from hospital data. There is no regular centralised reporting of data for the nation as a whole but IMT and CONAPRA prepared a consolidated estimate for ITF and the Ibero-American Road Safety Agency (OISEVI) in 2017 in a report benchmarking road safety in Latin American countries (ITF, 2017[34]). Data for Morelos is available from IMT and

CONAPRA and the three might usefully co-operate to produce consolidated data for road deaths and serious injuries in the state annually, given the high social cost of crashes and the importance attached to transferring road freight to rail in the interests of safety in Morelos. Similarly, there is no reliable reporting of the incidence, causes and impacts of crashes involving heavy goods vehicles. Key risk factors such as the incidence of overloading could be included in any project to improve reporting of road crashes. The condition of the roads is also important for safety. 45 000 km of roads have recently been surveyed under an iRAP project in Mexico (iRAP, 2017[35]), led by the Ministry of Communications and Transport (SCT). Star ratings are being used to benchmark crash exposure risk in relation to infrastructure quality across a third of all paved Federal roads with surveys also collecting pavement data for asset management. Results for Morelos are presented in Figure 4.3. The government could work with iRAP to rate all the principal roads in the state.

- Indicators of the efficiency of rail container services could be developed with the Mexican Rail Association, AMF. Such indicators would be valuable for the whole of the Mexican network and the new line could serve as a pilot for less intensively used lines.

Figure 4.3. Assessment of Federal Highways in Morelos for Road Safety



Source: iRAP (2017[35]), A Success Story, https://s3-eu-west-1.amazonaws.com/irap-public-read/www.irap.org/3-star-or-better/iRAP-3-star-or-better-success-story-Mexico.pdf.

Development of rail and intermodal freight markets in Morelos through rehabilitation of the rail freight line from Mexico City to Cuautla

Rehabilitation of the disused railway line from La Paz in the south-east of the Mexico City conurbation to Cuautla in Morelos is underway to establish an industrial and logistics platform in the eastern part of Morelos to promote the competitiveness of local businesses and create better jobs. Public funds are being used to contribute to the financing of the project with finance provided to Ferrosur, the rail freight concession holder for this part of the national rail network, by FIDECOMP (*Fideicomiso Ejecutivo del Fondo de Competitividad y Promoción del Empleo*), the organisation that manages investment from Morelos' Fund for Competitiveness and Employment. The fund raises revenue through a 2% surcharge on labour taxes levied on people and businesses established in Morelos and can cover up to a maximum of 50% of the overall cost of investment.

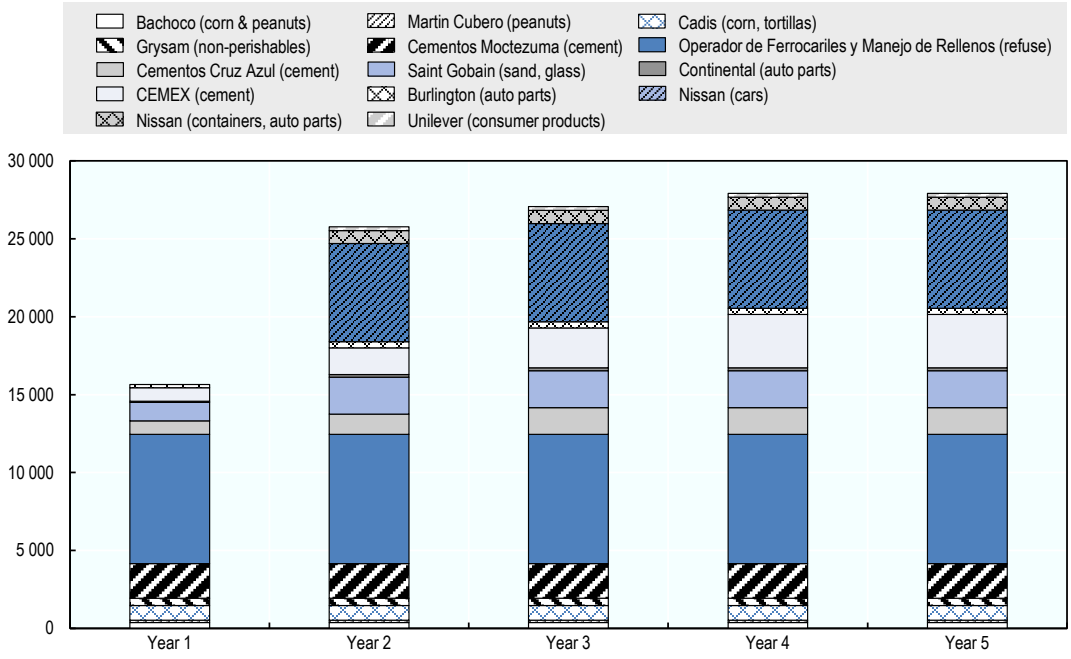
A total of MXN 185 million was made available to Ferrosur in two tranches in 2014 and 2015, to be repaid over 5 years (including an adjustment for inflation) from operations commencing on the line. A new agreement between the Executive of the State of Morelos and Ferrosur modified the terms of repayment to FIDECOMP. These now provide for the payment of an equivalent of USD 100 for each wagon hauled on the rehabilitated line until the investment is repaid (including allowance for inflation), with payments to begin after 8 000 wagons have been carried.

Planning for the Cuautla-La Paz rail link is advanced, with seven kilometres of line constructed and rehabilitation of the rest of the 103 km line expected to take six months. Ferrosur has consulted with potential rail freight customers in and around the Cuautla industrial park and estimated the volumes of freight that could initially be carried on the new line (Figure 4.4). The key clients are likely to be CEMEX shipping cement to domestic and international markets, St Gobain bringing in silica sand for glass manufacturing and shipping products domestically and internationally, and PEMEX bringing in oil products for local distribution from refineries in Mexico and Texas. Intermodal services are expected to develop in the first five years, including Nissan, serving its plant in neighbouring Cuernavaca. The freight actually carried will depend on the negotiation of competitive tariffs between Forrosur and shippers.

As part of a concession, Ferrosur will be required to carry freight requested by shippers, subject to agreeing terms on tariffs for carriage. These are subject to commercial negotiation under a cap established by SCT in maximum national freight rates. Should the parties fail to agree on tariffs recourse can be made to the regulator (the Agencia Reguladora del Transport Ferroviario – ARTF).

There is potential for more intermodal container traffic among shippers using rail to distribute goods to intermodal terminals elsewhere in the country. Reliable intermodal services could be an attractive alternative to road transport on the congested roads in and around Mexico City for shippers distributing goods from Mexico City and the north of the country to Morelos and further south. Consultations with ANTP National Freight Transport Association and major intermodal shippers are indicated to explore the potential for this market and provide a basis for the State Government's proposed investment in intermodal facilities in the Cuautla industrial park.

Figure 4.4. Estimates of initial freight volumes (wagons) to be carried on the Cuautla rail line



Source: Ferrosur (2017[36]) , Estimates of Freight Volume.

Organisation of the National Rail Market

Mexico's railway network is owned by the State and concessioned to private companies that run integrated track and train operations for profit under long-term contracts. Concessions provide exclusive rights to run the railways over large geographical territories but also impose trackage rights on a number of key sections of track so that companies can run trains on each other's networks (OECD, 2017[37]).

The government broke up the former national railway, Ferrocarriles Nacionales de México (FNM or Ferronales) in the 1990s because it offered poor service and had a deficit of more than a half-billion USD annually. Planning for concessioning began in 1995 with the passing of the Law on the regulation of rail services[2] and concessions were awarded between 1996 and 1999. Transfer to new operators began in 1997 and was completed in 1999. The concessionaires paid the government compensation totalling approximately USD 3 billion (2014 prices) for rights to operate the network (ITF, 2014[38]).

Three major concessions were awarded: TFM, now Kansas City Southern de Mexico (KCSM); Ferromex; and Ferrosur (originally two concessions merged in 2000); along with a number of smaller concessions. Ferromex and Ferrosur were both founded as subsidiaries of companies owned by Carlos Slim. Ferrosur was acquired by Ferromex's parent company, Grupo Mexico, in 2011 but the networks continue to be run independently.

The concessions were structured to provide effective competition in the main freight markets, providing major industrial centres and Mexico City with alternative services to ports and the border with the USA (ITF, 2014[38]). Access to the biggest market, the greater metropolitan area of Mexico City, is provided by a neutral track access and

terminal company, Ferrovalle, jointly owned by KCSM, Ferromex, Ferrosur and the government that also accommodates a commuter passenger operator. The rail line under reconstruction from Cuautla to La Paz will provide access from Cuautla to the rest of the Ferromex/Ferrosur network and joins the Ferrovalle service area at La Paz.

The movement of intermodal traffic on the Mexican railways is summarised in Figure 4.5. The main flows are between Mexico City and Mexico's main ports and to crossing points along the border with the USA. The trunk line north from Mexico City to Monterrey and the Nuevo Laredo border station is concessioned to KCSM but subject to trackage rights and also carries Ferromex trains. It is of high strategic importance to Mexico's industrial strategy and to inward investment as it supports the integrated operation of car plants and component manufacturers along its length. Plants in Mexico and the USA are able to operate as integrated production facilities with bonded containers ferrying parts and semi-finished vehicles back and forth across the border.

Figure 4.5. Containerised rail freight in Mexico by route

Source: Instituto Mexicano del Transporte.

So far there are no plans to connect Nissan's car manufacturing plant in Cuernavaca to the new Cuautla rail link as it lies 25 km from the alignment. A rail connection to Nissan's manufacturing plant in Aguascalientes on the northern trunk line might generate profitable traffic but rail access to the Cuernavaca site would be complicated by the urban development in the surrounding area. More broadly, some existing general intermodal shippers should find opportunities to serve a depot in Cuautla.

The current National Development Plan's Programme for the Transport Sector includes significant federal investments to improve the speed and safety of rail freight movements through urban areas. A number of bypasses around conurbations have been funded to remove conflicts with road traffic and some of the very many at-grade road/rail crossings have been gated to reduce crash risks. Unfortunately, many of the investments in safer level crossings have been defeated by theft of the cabling, control and surveillance systems. Improving the safety of road/rail crossings remains a national priority and new investments have to satisfy safety requirements with approval from the ARTF.

Under the 1995 Railway Law, the government is responsible for developing new lines. Some financially attractive potential new links may exist but the rights granted to concessionaires do not include building significant extensions for exclusive use (a new concession would need to be tendered). The Cuautla rail alignment was part of the concession awarded to Ferrosur and is shown as part of the Ferromex network on the company's website (Figure 4.6). However, the last train ran on the route around 30 years ago, a decade before the concession was awarded. Concessionaires are obliged to meet any shipper's request to carry traffic on their lines, subject to reaching satisfactory agreements on tariffs, but clearly on disused alignments this is not possible. Whilst the legal framework for rights and responsibilities relating to re-establishment of a disused line under an existing concession have not been investigated in detail, it appears eminently appropriate for such initiatives to be undertaken in partnership between government, concessionaire and shippers. The Cuautla line will be the first major extension of its kind to the national rail freight network. Clarification of the rights and obligations of concession holders rehabilitating disused lines is something that appears more suited to being addressed through a review of the Railway Law or at the point when concessions are re-let rather than on a case by case basis in relation to specific projects.

Figure 4.6. Ferromex/Ferrosur (grey) and KCSM (blue) rail networks in central and southern Mexico

Source: (Ferromex,(n.d.)[39]) Ferromex Rail Networks in Central and Southern Mexico, http://www.ferromex.com.mx/ferromex-lo-mueve/sistema-ferromex.jsp.

Recommendations

An early opportunity should be sought to complete the State of Morelos' public policy statements on strategic infrastructure planning with regard to transport and logistics, road safety and railway development. Current policy documents focus on the details of individual investments but lack an explanation of the approach to project prioritisation and value for money. A public statement of the economic rationale underlying public investments in transport infrastructure would be valuable in strengthening the basis for stable consensus on the priorities for the use of State funds in projects that typically have long lead times.

In particular, the case for support from public funds for the development of the freight railway line to Cuautla should be set out as part of the overall infrastructure and logistics development policy. There is a clear rationale for public support for this project. It will facilitate the development of the industrial park in Cuautla and provide the basis for an intermodal hub freight transport hub with the potential to serve the State and the region. Initial market assessment suggests positive returns and a relatively short payback period. The railway concession that will build the line has other investment priorities with higher expected returns and/or lower risks elsewhere in Mexico. Therefore, public intervention is required to unlock the potential benefits to the local economy. The State Government will

pay for the construction costs of the line and recover the cost from the rail traffic carried once traffic exceeds an agreed threshold. No interest will be charged on the capital invested. Negotiation of this financing agreement has reached closure and the priority now is to expedite construction. It is appropriate that the government bears demand risk on this project as transferring risk to the rail operator through the financing arrangements would inevitably increase the cost of the project substantially. What the government expects in return is the generation of rail traffic and economic activity in Morelos. A public statement of these considerations would pre-empt any potential concern over the value for money of this public investment.

The initial assessment of the potential rail freight market to be served by the line has been developed by the commercial services of Ferromex in consultation with potential shippers in and around Cuautla. The overall volume of freight suited to rail transport has been identified but commercially viable traffic is less well understood as prices have yet to be discussed between the carrier and potential shippers. The associated risk is being carried mainly by the taxpayer and the government should work with Ferromex/Ferrosur and shippers to get a better idea of the commercial volumes of traffic that can be expected to be carried.

Planning for intermodal traffic is less advanced. Intermodal facilities would be built in Cuautla in a second stage. The government should convene consultations with major intermodal shippers and the ANTP National Freight Transport Association to explore the potential for this market to determine the scale and phasing of investment in intermodal facilities in the Cuautla industrial park. The potential for this market is strong given congestion on the road links to Mexico City but as yet unknown.

Construction of the railway line will be reviewed by the rail regulator, ARTF. In particular approval from the Agency is required in respect of the safety of road/rail crossings. The Government of Morelos should work pre-emptively with Ferromex/Ferrosur to establish the design criteria for crossings on the alignment in consultation with ATRF to avoid any risk of cost over-runs for remedial construction work to meet safety standards. Where gated and controlled crossings are installed the Government should consider installing surveillance cameras for monitoring by its C5 security centre.

Notes

[1] Available at: http://pnd.gob.mx/.

[2] Ley Reglementaria del Servicio Ferroviario, May 1995, http://www.sct.gob.mx/informacion-general/normatividad/transporte-ferroviario-y-multimodal/leyes-federales/.

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Annex A. Monitoring progress at a glance – Morelos

3	Significant Progress
2	Progress / Partial Implementation
1	Modest Progress / Further implementation is needed
0	No progress / Changes need to be addressed

ST	Short-term = 0-1 year
MT	Medium-term = 1-3 years
LT	Long-term = More than 3 years

Note: The category "Progress reported" reflects the OECD's own impressions based on mission findings and evidence-based analysis.

Table A A.1. Detailed analysis of progress per sub-recommendation

Progress reported on sub-recommendations	T	N	Nature of the action	Bottlenecks identified	The way forward
Recommendation #1: Improve the quality of basic education, especially in peri-urban areas and lagging rural communities, and increase participation in upper secondary and tertiary education					
1. Centralise the collection of information/data about schools and student performance in Morelos.	ST	1	Software proposal was designed and presented to the state fund (*fideicomiso*) in February 2018	• Software to collect and manage information/data on students' enrollment and abandonment rates in schools still to be implemented • The system to evaluate students' performance should be digitalised and integrated to the one on abandonment and enrolment dates	• Implement software to include primary education (primary and elementary schools) and high schools • Include data about students' performance • Apply software in all schools • Create a single number by student See Personal Identification Number in the Netherlands (OECD, 2017, p. 102) [equally valid to sub-rec 2].
2. Introduce measures to identify low performing students at early stages and mobilise specialised school staff for remedial support in schools located in municipalities at the periphery of metropolitan areas, but also lagging rural areas where a high share of underperforming schools are located.	MT	1	Continued efforts to maintain programmes for schools in lagging behind areas and for population groups with specific needs (Indigenous, migrants, those with disabilities).	• Such system exists in high schools and HEIs but it is divided into evaluation of socioeconomic conditions and performance evaluation. • There is no single system to follow the student throughout his/her student life, creating a "dossier" per student. • School abandonment is not addressed as a multi-dimensional phenomenon.	• Develop an integrated system to evaluate both performance and attendance that can follow the student from primary education to high school. Extend this evaluation system to high schools right away (no need to wait until primary education students get to high school). • Invest in school infrastructure in lagging-behind areas. • Create specific tutoring or after-school programmes to aid under-performing students. • Strengthen link with students' families for accompaniment. • Create financial aid programme to the specific needs of Indigenous students. • Include Indigenous school abandonment as an indicator in the PEDI and monitor progress on it.

Progress reported on sub-recommendations	T	N	Nature of the action	Bottlenecks identified	The way forward
3. Revise the "universal" dimension of the Beca Salario scholarship programme available from lower secondary up to tertiary education (postgraduate studies excluded) in order to better target students at high risk of dropping out for financial reasons. The resources of the current programme go to all students independently of their socio-economic conditions and risk of dropping out.	MT	1	Diagnostic study to assess the effectiveness of the programme will be concluded in 2018 and presented to the competent authorities.	• The programme's objective and conditions of operation contradict each other: • If the objective is to fight school abandonment by alleviating financial difficulties, the selection of beneficiaries should prioritise those with poorer socioeconomic status. • If the objective is to support all students, then the programme can be kept as it is but should be monitored and evaluated.	• Conclude the diagnostic study and use it to promote informed policy change. • The state can either: change the objective of the programme, by saying that it aims to benefit all students by offering them assistance to pay for public transportation and one meal per day; or change the way that beneficiaries are selected, targeting the ones most in need of such aid. • Monitor the trajectory of beneficiaries, regarding both attendance and performance, in order to evaluate the efficiency of the programme. • Consider other forms of assistance to students, such as public transport passes or meal tickets.
Recommendation #2: Ensure training programmes are more responsive to the needs of the economy and target the informal sector too					
4. Increase private sector involvement in the updating of training programmes and the provision of work-based learning opportunities for young people.	MT	2	The dual education programmes on tourism and gastronomy by UTSEM with the support of the Ministry for Tourism formed their first class. Certification courses were taught by business owners and representatives.	• The region is locked in a low-skills equilibrium whereby low supply of skills translates into low demand of skills. • Little involvement of private sector in the design of training curricula.	• Starting with gastronomy and tourism was a good strategy. Moving forward the state should expand programme to other industries, especially to strategic high-skill sectors, such as ICT, energy and automobile. • Involve Human Capital Council in forecasting skills and labour market trends. • Evaluate skills needed by industry to identify new courses. • Involve businesses in the design of new courses.
5. Promote entrepreneurial skills development early in the education system. The integration of current curricula with business insights would promote entrepreneurship and a closer relationship between educational institutions and the private sector.	MT	2	Creation of centre to support youth entrepreneurship (*Casa del Emprendedor Poder Joven de Morelos*) and organisation of Youth Business Camps (*Campamento Desafío Inova*) in 2017	• Difficult to promote structural changes in schools e.g. curricular reform. • View of entrepreneurial skills too narrow on technological skills, less emphasis on the aspects of problem-solving and creativity.	• Include non-cognitive social and emotional skills in the teaching methods of early education, via collective activities and arts ateliers. • Continue investing in the youth entrepreneurship centre and the innovation business camps.

Progress reported on sub-recommendations	T	N	Nature of the action	Bottlenecks identified	The way forward
					• Offer to elementary school students the possibility to carry out a 1-week internship in a firm or public institution (see French model).
6. Establish a monitoring framework for the regional labour market training and entrepreneurship support programmes of the National Employment Service and ICATMOR.	ST	1	Indicators under development.	• Data is not systematised and digitalised. • There are few M&E models to copy from in the state. • The COEVAL and the Council of Human Capital haven't been involved in this task.	• Learn and adopt monitoring and evaluation techniques, e.g. use of indicators. • Involve the COEVAL in M&E. • Strengthen link between SNE and Human Capital Council.
7. Make a better use of the process of validation of previous learning and certification of skills acquired in informal and informal environments, to increase the possibility to access formal employment, while also boosting incentives for individuals to pursue further education.	MT	1	• The SNE has invested in certification of skills for self-employment since October 2017.	Besides validating learning experiences, which is important, but done by the national SNE, Morelos should give incentives for recent graduates or accredited people to pursue further education. This concerns skills training and certification, but also access to college.	• Further invest in validation of skills in technical education via the accredited CONOCER centres. • Expand training programmes to strategic sectors such as logistics and energy. • Consolidate existing programmes. • Ensure approval criteria are rigorous enough that only qualified students obtain certificates. • Support financial security to access college education via scholarships and apprenticeship systems

Progress reported on sub-recommendations	T	N	Nature of the action	Bottlenecks identified	The way forward
Recommendation #3: Improve knowledge creation, diffusion and exploitation					
8. Supporting the development and emergence of innovative companies by creating structures which can provide legal and business advice for the commercialisation of innovative ideas.	MT	2	• The Ministry of Innovation changed the professional profile of staff in order to provide more structured and sound advice. • Eindhoven agreement helps to structure companies and give them visibility. Few companies but high-profile.	• It is important that the activities of the Ministry for Innovation outlast the current administration. • Concept of innovation limited to high-technology change.	• Institutionalise relation and ensure channels reach more stakeholders. • The ministry could develop written guidelines or rulebooks on how to start a company. • Broaden the definition of innovation. • Improve outreach to firms beyond S&T, to include process innovation in services and social innovation.
9. Improve access to capital for knowledge-based start-ups. The public administration can help new firms access financial institutions, providing guidance and sharing part of the business risk by providing collateral for credit.	MT	1	• The Ministry of Innovation signed an agreement with the business incubator High Tech XL in Eindhoven, Netherlands, to launch new start-ups. • Primer Impulso, InnovaTIC and TecnoCemiTT programmes continue to offer seed money.	• Limited access to internal sources of private capital. Most money for research is public or foreign.	• Have a strategy for private funding, e.g. American Sciences Academy. • Support incremental innovation across multiple sectors. • Combine seed money with private funds, such as a co-financing model. Expand *Primer Impulso* and *InnovaTIC*.
10. Bridging the existing gap between public research facilities and the business sector, by promoting platforms of co-operation between public and private stakeholders.	LT	2	In 2017, 59 business owners and 177 researchers received capacitation to design joint innovation projects. As a result, in the 2018 call for projects of PEI CONACYT, 36 out of the 58 projects presented by Morelos' businesses and research institutions were approved and will receive funding from the federal government.	• The process of linking firms and research institutions is very dependent on interpersonal relations of the ministry's current staff, which raises concerns on continuity in next administration. • Concept of innovation limited to high-technology change.	• Continue offering capacitation and training. • Besides agreements, the ministry could think of more organic, independent ways to fund businesses, e.g. fairs, events, innovation vouchers. • Consolidate more institutionalised relations. • The ministry should invest in an automated platform to connect business needs and research profiles in order to improve communication and generate new opportunities. • Support firms that are not highly technological but can innovate in services or social activities.

Progress reported on sub-recommendations	T	N	Nature of the action	Bottlenecks identified	The way forward
Recommendation #4: Strengthen the role of the Council for Human Capital to promote the upskilling of the labour force and an integrated vision					
11. Better define the Council's mission and operating model. The council should define its role, functions, and tasks, including the mutual goals of the involved stakeholders.	ST	2	Organisational changes: The Council better developed its mission and vision; established the functions of sectorial groups; and set up short-term goals.	The Council has made great efforts to advance its mission and operation model. Yet since they are still at the beginning of activities, the Council is more formal than material: • Activities are not organically promoted. • Some functions remain unclear. • Sustainable funding streams not assured.	• Consider hiring a second co-ordinator. • Involve a broader range of stakeholders and create more organic relationships, follow example of Brainport model. • The Council should avoid rigid models and have enough flexibility that gives room for experimentation. • Look for complementarities in the example from the *Consejos de Vinculación Laboral* which exist at upper-secondary and tertiary level. • Be more forward-looking. • Cross-fertilise practices.
12. The council should work closely with state labour market training agencies to define its priorities.	MT	2	The SNE and the ICATMOR participate in the transversal group of education and in some sectorial groups.	• There is little participation of private sector in some sectorial groups, especially SMEs and start-ups. • The Council has to act as "broker", approximating business needs and training opportunities.	• Involve the SNE and ICTAMOR in matching business needs and training opportunities. • Have a stronger leadership role in defining business needs and priorities over the medium and long term. • Invest in conversations about the future of work, together with academic institutions.
13. Ensure a more varied composition of sectoral representatives. Officials from the state government and the education sector are currently over-represented to the detriment of business professionals.	ST	2	Organisational change: with the creation of groups of Pharmacy, Construction and Automotive, more representatives of private sector have joined the council.	• There is little participation of private sector in some sectorial groups, especially SMEs and start-ups. • Gender imbalance in the composition of the Council. • Geographic imbalance, too: few councillors from outside Cuernavaca and Industrial Parks.	• Continue with outreach and have clear plan of work. • Incentivise participation of private sector, notably start-ups and PMEs, via learning and networking opportunities and involvement in international events such as fairs. • Make use of technology to hold virtual meetings. • Invite women working in different fields to be part of the Council.

Progress reported on sub-recommendations	T	N	Nature of the action	Bottlenecks identified	The way forward
					• Approximate calendar of meetings with the one of large events to gather representatives from all over the state.
14. Adopt a demand-led approach to training content by involving the private sector into the early definition of programmes.	LT	2	UTSEM, UTEZ and the Ministry of Labour carried out situational analysis of labour to understand the needs of the business sector and divulgated the results to the Tourism Ministry.	• Still limited dialogue with private sector in the early definition of programmes.	• Complete diagnostic of labour market demand for skills. • Invest in links with ICATMOR and SNE. • Make sure the curricula of new capacitation programmes are designed in collaboration with private sector, Ministry of Labour and Ministry of Tourism.
15. The definition of sectoral groups should not preclude cross-fertilisation. Organising sectorial and thematic areas around a matrix may ensure that sectors and thematic areas meet. Working groups of thematic areas should participate in all sectoral activities in order to develop a common vision. For instance, insights from the high-tech working group should inform the activity of working groups in tourism and the agro-industry.	MT	3	Organisational change: the groups of Education and Research and Innovation were made transversal, and short-term objectives were established.	The transversal groups do not have as of yet a clear strategy on how to promote common objectives that can create engagement among the different groups.	• Establish schedule for members of Innovation and Research group to participate in the activities of the sectoral groups. • Elaborate key common objectives that two or more groups can work together in. • Involve Ministry for Innovation more closely, for instance, by creating a “duo” of sectorial group co-ordinator and representative of the ministry in each group.
16. The outcome of the Council should be measured and evaluated according to agreed targets.	ST	1	The council established short-term goals and a strategic plan on how to achieve them. Nine indicators to track progress were also set. The council met with COEVAL to develop a monitoring framework.	• The Council only has short-term goals. • The indicators only refer to outputs of state programmes. • Monitoring and evaluation mechanism has not been set yet.	• Develop long-term goals with related targets and strategies of how to achieve them. • Adopt indicators that reflect outputs of actions carried out by the Council itself, and that account for the quality of actions, such as outcome indicators. • Invest in a structured mechanism to monitor and evaluate progress in the long run. • Continue dialogue with COEVAL.

Progress reported on sub-recommendations	T	N	Nature of the action	Bottlenecks identified	The way forward
Recommendation #5: Spatial planning requires a better implementation strategy					
17. Build more accountability into the spatial planning system to reduce discretion in the implementation of policies and ensure the continuity of territorial and urban development plans.	LT	1	Changes in progress. • The procedure of revision of the State Programme for Sustainable Land Management and Urban Development (PEOTyDUSM) is ongoing. Public consultations took place in December 2017. • The Ministry for Sustainable Development has recognised the need to publish projects evaluated and violations in the website of the *Bitacora Ambiental.*	• The State of Morelos still has to harmonise the Federal Law of Housing, Territorial Planning and Urban Development (LGAHOTDU) into their own legislation. The deadline was November 28, 2017, according to the transitory article 3 of the Federal Law. • The websites to publish projects, documents and violations are not up-to-date.	• Give continuity to the revision of the PEOTyDUSM. • Follow three-stage harmonisation plan: enactment of a new Law of Territorial Planning and Urban Development (LOTDUSEM), enactment of the corresponding set of rules (*reglamento*) and capacity-building of civil servants. • Ensure that there are participatory mechanisms in place during the elaboration of the LOTDUSEM. • Capacitate municipalities on the overall content and guidelines of the federal and state laws so they can develop their own spatial planning laws in accordance to the federal and state legislation. • Regularly publish the projects and violations in the correspondent websites, such as the *Bitácora* Ambiental and the *CUSF* system.
18. Create an independent council, with technical competencies, to assure continuity and effective implementation of long-term spatial planning. This is important to integrate short-term projects into long-term goals. For instance, with regards to urban planning, the council could help the alignment of local projects with the state urban development vision.	MT	2	Organisational change with the creation of the State Council for Spatial Planning (CEOT) in 2017.	• The council has to be involved in planning processes which are scattered across policy sectors. • The council's technical function may supersede its capacity to get strategically involved in decision-making. • The council is presided by the state, thus not being an independent council.	• The council should work together with the IDEFOMM as co-ordinator between state and municipal actors, as a broker. • Include representatives of the Ministry for Mobility and Transport in the Council. • Include direct representation of municipalities; the Association of Municipalities could be the actor. The IDEFOMM is a state actor. • Consider handing the presidency over to civil society groups, as is in the Sustainable Development Council. • Guarantee that the sub-technical committee has sufficient technical and financial resources to operate.

Progress reported on sub-recommendations	T	N	Nature of the action	Bottlenecks identified	The way forward
Recommendation #6: Urban policies should design and implement policies at the metropolitan scale					
19. The governance of metropolitan areas in the State of Morelos relies on a large number of actors. The State Ministry for Mobility and Transport should be integrated into the co-ordinating agency of the metropolitan areas to ensure policies tackle metropolitan-wide challenges in a harmonised way.	MT	2	Organisational change by which the Ministry for Mobility and Transport became a permanent member of the Metropolitan Development Council, in the sub-committee of project evaluation of the board of the trust committee.	• The Metropolitan Development Council funds project in a piecemeal, fragmented manner. • The role of the Ministry for Mobility and Transport in the council remains weak. • There is little involvement of civil society and federal actors.	• Elaborate integrated plans for metropolitan development. • Resort to long-term integrated metropolitan planning to justify funding allocations by the Council. • Involve civil society actors and federal representatives in the operations of the Council.
20. The Metropolitan Fund should respond to a comprehensive urban development plan that prioritises the needs of the broader metropolitan areas.	LT	1	No change in how the Metropolitan Fund is used, but legal changes on urban development are in progress: • LOTDUSEM is being updated to harmonise with the federal LGAHOTDU. • PEOTyDUSM is being revised according to the updated LOTDUSEM.	• The Metropolitan Development Councils of Cuernavaca and Cuautla fund projects in a piecemeal, fragmented manner. Resource allocation is not based on strategic view for metropolitan development. • Metropolitan Spatial Planning Programmes are missing; they exist only for 2 conurbations.	• The Metropolitan Development Councils of Cuernavaca and Cuautla have to follow the national guidelines on how to fund projects using the Metropolitan Fund. • Elaborate integrated plans for metropolitan development. • Formulate the 2 Metropolitan Spatial Planning Programmes (Cuernavaca and Cuautla), in respect to LOTDUSEM guidelines, and with the participation of municipalities. • Include in the new LOTDUSEM the 2 Metropolitan Spatial Planning Programmes as mandatory tools of the Spatial Planning system in Morelos. • Use spatial planning programmes and metropolitan plans to create a strategic, common vision for the development of the territory.
Recommendation #7: Rural policy must go beyond agriculture and develop further synergies with the tourism sector					
21. Adopt a multi-dimensional territorial approach to rural areas, which goes beyond the agricultural	LT	2	• More emphasis was given to the agro-tourism, with the creation of new	• Implementation of routes suffered significant delays due to	• Elaborate and implement the Strategic Plan of Rural Tourism.

Progress reported on sub-recommendations	T	N	Nature of the action	Bottlenecks identified	The way forward
sector and looks at opportunities for other sectors of the rural economy to develop and contribute to growth. For instance, the natural and agricultural landscape can be integrated into agro-tourism activities. It is important that the policy content is open to the contribution of all involved stakeholders, avoiding a top-down type of approach. Finally, financial resource should be channelled towards productive investment projects rather than compensate for lost income.			routes (rice and avocado). ● Training courses in tourism and gastronomy are being offered. ● Certifications of sustainability and excellence are being awarded. ● The Magical Towns programme has received international prizes.	damages caused by the earthquake. ● The Strategic Plan of Rural Tourism is still in preparation. ● The establishment of Economic Areas of Environmental Value (UEVAs) is still in diagnosis stage.	● Implement routes of rice, avocado and goat cheese. ● Develop action plan to promote these routes. ● Consolidate *Orgullos Morelos* brand, by linking it to food products that are specific to Morelos. ● Improve internal accessibility, e.g. pave roads. ● Consolidate UEVAs and invest in sustainable tourism activities to generate wealth for the local population. ● Invest in S&T to improve the quality of agriculture produce, e.g. EMBRAPA in Brazil. ● Support entrepreneurship. ● Move forward with cultural and culinary diplomacy strategy in national and international arenas.
22. Develop tourism policies in accordance with environmental preservation, but first and foremost complementary to other policy areas.	MT	2	40 touristic establishments received training on Sustainable Tourism Practices and are in the process of being awarded the sustainability certificate (*Distintivo S*).	● The establishment of Economic Areas of Environmental Value (UEVAs) is still in diagnosis stage.	● Invest in broadband connectivity. ● Rebuild route of convents (cultural heritage). ● Consolidate UEVAs and invest in sustainable tourism activities to generate wealth for the local population.
23. Elaborate and deliver appropriate training to upskill workers in the tourism sector. Develop support for tourism entrepreneurship.	MT	3	● 62 training courses were offered under the Programme of Capacitation and Touristic Competiveness. ● Specific capacitation to develop productive chains under the Magical Towns programme took place in 28 municipalities.	● Specific capacitation to municipalities under the *Programme of Technology Transfer* suffered delays because of the earthquake. ● The *Tesoros de México* will assist and qualify 14 companies but it didn't take place yet.	● Consolidate capacitation programmes for tourism and gastronomy. ● Involve the Human Capital Council in the elaboration of capacitation programmes. ● Expand capacitation to high-skills sectors. ● Continue supporting local gastronomy. ● Continue supporting entrepreneurship in the Magical Towns programme.

Progress reported on sub-recommendations	T	N	Nature of the action	Bottlenecks identified	The way forward
Recommendation #8: Accessibility of the region should strengthen both a. connections to external markets in neighbouring states and export and b. internal connectivity					
24. Investments in railroad and road networks should continue to improve the accessibility of the region to Mexico City, neighbouring states of Puebla, State of Mexico and Guerrero and to external markets in the Pacific and Atlantic coasts.	LT	2	Investments are moving forward, the Siglo XXI road will be inaugurated in 2018 and the project of the railroad in Cuautla with the creation of the multimodal station is advancing.	• Viability study of volume of goods to be transported via the railroad not published.	• Consider joint initiative with Puebla and Guerrero to improve connectivity to the Pacific. • Clarify viability of Cuautla railroad project.
25. Improve urban mobility while taking into account the environmental dimension.	LT	2	• Organisational change with the creation of the CEOT and the revision of the PROAIRE. • Creation of green zone of Cuernavaca. • Conversion of 3 000 taxis to natural gas.	• Morebus project (BRT) was postponed. • There is no other public transportation project that promises to augment mobility while reducing the levels of environmental pollution and congestion. • Strategies to improve circulation and mobility in the Ecozona of Cuernavaca were not implemented. • The CEOT stands apart from municipalities.	• Carry out diagnostic study to identify needs and solutions for public transportation in the whole of the metropolitan areas. • Implement zones exclusive for pedestrian traffic, as planned. • Invest in multi-modal, less pollutant public transportation systems. • Implement better vehicle circulation in the Cuernavaca Green zone. • The CEOT should capacitate municipalities and assist them in the development of ecological plans, as to include the dimension of sustainable urban mobility. • Make conversion to natural gas a condition for renewing of concessions of public transportation, as opposed to having automatic renewal processes as it is today. • A condition to renew concession of transportation of goods and materials should be the conversion of trucks to natural gas.
26. Strengthen internal connectivity by better connecting marginalised municipalities. These initiatives should be integrated and aligned with policies improving education and capacity at the municipal level.	LT	1	• State Road Plan (*Plan Carretero Estatal*) for pavement of dirt roads. • FONDEN Programme for reconstruction of roads affected by the earthquake.	• Lack of financial resources. • Setbacks because of earthquake and insufficient time to carry out works.	• Continue rebuilding and maintaining existing roads. • Continue paving roads to expand internal connectivity. • Better connectivity has to be complemented by development policies. “Leaking by linking” argument.

Progress reported on sub-recommendations	T	N	Nature of the action	Bottlenecks identified	The way forward
			• Percentage of paved roads in good conditions went from 48% to 52%.		• Increased internal connectivity should be a goal of state spatial planning (PEOT) and municipal development plans.
Recommendation #9: Preserving the environment by co-ordinating and implementing policies to mitigate climate change					
27. Design and implement a comprehensive plan for environmental protection, which includes greenhouse gas emissions, waste management, and quality of water.	MT	2	Legal change, with the enactment of the reviewed version of the PROAIRE and with the publication of the PEGROTM which offers a holistic view of risk, linking it with spatial planning. PEACCMOR covers climate change mitigation planning. The Risk Atlas was updated, including now seismic risk.	• The Ministry for Sustainable Development is understaffed [applies equally to 28 and 29] • Capacitation of civil servants is lagging behind. • Municipal environmental protection plans are not well linked to urban development plans. • Ecological land management plans by municipalities and Risk Atlases are lacking, and when they exist, are outdated.	• Municipalities should enact and update their ecological land management plans (*ordenamiento ecológico)*. • Municipal civil servants should receive training to update the *ordenamiento ecológico* in alignment with the POEREM. • Morelos needs a specific action plan to deal with risk. The plan is by nature a generic instrument that needs further operationalisation. I.e. the plan should yield for implementation. One way to do so would to better connect PEGROTM with Risk Atlas. • Implementation of plans requires more personnel, and qualified one. • Support municipalities in developing their own risk atlases by offering capacitation and assisting in channelling funds.
28. Foster the connection of state programmes to national and international environmental programmes, such as the Climate and Clean Air Coalition (CCAC).	LT	1	No change. But the Ministry for Sustainable Development has 26 collaborative projects ongoing with 11 different countries on climate change and sustainable development. They have also participated in international fora such as the COP 13 for Biodiversity held in Cancun 2016.	• The connection with international environmental programmes could gain more coherence and more support from other state actors. • International engagement depends to some extent on actions and orientations issued by the federal government.	• Elaborate diagnostic of the main deficiencies of the state and how to overcome them with the support of international co-operation. • Continue promoting portfolio of projects of renewable energy and energy sufficiency. • Involve other state ministries more closely in the elaboration of diagnostic and portfolio of projects. • Adhere to National Natural Areas Protected Programme.

Progress reported on sub-recommendations	T	N	Nature of the action	Bottlenecks identified	The way forward
29. Promote the substitution of fossil combustion with gas for public transportation, exploiting the newly constructed gas pipeline and national programmes fostered by SEMARNAT.	MT	1	Conversion of 3 000 taxis to natural gas.	• The Morebus project (BRT) was postponed; its funds were reallocated to earthquake reconstruction. • There is no alternative project for sustainable urban mobility.	• Carry out diagnostic study to identify needs and solutions for sustainable public transportation. • Invest in multi-modal, less pollutant public transportation systems, including cycling. • Invest in electric buses or convert buses to natural gas, since buses are the main public transportation model in the state. • Make conversion to natural gas a condition for renewing of concessions of public transportation, as opposed to having automatic renewal processes as it is today.
Recommendation #10: Foster co-ordination of the state administration with municipalities, and with neighbouring states					
30. The State of Morelos should seek strategic alliances with neighbouring regions on business development issues (such as with the state of Puebla on the automotive industry) as well as infrastructure provision, such as highways or railroads. The CONAGO forum among state governors represents an opportunity for greater interstate co-operation, but it should be integrated with technical groups of analysis that could provide support to regional governments and exchange good practices in addition to representing states at the national level.	LT	1	Some co-operation agreements have been signed particularly concerning research and tourism. Co-ordination meetings between ministers of economic development have continued taking place.	• Evolution remains limited in terms of enhanced co-ordination of the state with neighbouring states. • Morelos may face both political and legal limitations (that would have to be removed) to agreements with adjacent regions. It is also going into an electoral year which may complicate political consensus.	• Leverage the deeper knowledge of the economy coming from the Human Council to better target co-operation. • Make the most out of the recent infrastructure investments to improve connectivity with neighbouring states
31. Strengthen the roles of the COPLADES so that it becomes a real forum for strategic co-ordination and partnerships between state and local administrations. Develop further mechanisms between the state and local administrations.	MT	1	• Relationships have been strengthened via an enhanced presence of representatives of the state to the meetings at COPLADEMUN. • The state has also subscribed an	• The State government is strongly dependant on good-will and political agreements with mayors to enhance co-ordination and push the regional agenda at the territorial level.	The initiatives go in the right direction, nonetheless, some measures could be taken: • The role of the COPLADE needs to be further clarified. • Local challenges should be able to feed regional development plans and policies.

Progress reported on sub-recommendations	T	N	Nature of the action	Bottlenecks identified	The way forward
			agreement with some municipalities to channel resources from PRODEMIN to improve territorial planning and build an atlas of risks.	• The current actions tend to push forward a top-down approach to development; there is little room for local policies to feed regional development plans and actions.	• Fiscal incentives could contribute to better align policies across levels of government and invite municipalities to further invest in capacities at the local levels as well as the development of planning instruments. • Building across levels of government will be essential to enhance co-ordination.
Recommendation #11: Improve governance mechanisms and the business climate					
32. Develop a public service administration that can fully conceive and implement long-term planning and evidence-based policy making and their corollary: policy monitoring and evaluation.	LT	2	The regional regulation changed to include the planning instruments needed to establish objectives at the short, medium and long term.	Amongst the main bottlenecks remaining to improve planning instruments and policy evaluation are: • Limited capacities. • Limited amount of data available. • Limited amount of resources. • High turnover in civil service and thus limited policy continuity.	• Ensure strong relationship between planning and budgeting. • Special attention should be put in the design of indicators, making sure, amongst other, that they are outcome indicators rather than input. • Create the right feedback loops to ensure that evaluation results are taken into account in policy design.
33. Restore trust in the public administration by adopting the national anti-corruption policy, providing public information on policies namely on expenditures, and creating a single-stop shop to clarify the rules and regulations of the myriad of transferred funds.	LT	2	• Strong steps have been taken to adopt the national anti-corruption scheme to the State of Morelos. Some parts of the package are yet to be finalised but a substantial amount of work has been done. • Further transparency instruments have been installed to enhance public accountability. • Significant steps have also been taken to improve the business regulatory framework in the state.	• Political blockage seems to be an issue for the adoption of the anti-corruption system. • Transparency instruments have to allow a real understanding of process, information has to be provided at two different levels: i) citizen friendly and ii) disaggregated for researchers and organised civil society. • There is no clear objective to build a single stop-shop providing more clarity on the myriad of	• Finish the adoption of the legal and institutional arrangements corresponding to the national anti-corruption scheme. • Put strong emphasis on the enforcement of the scheme providing. • Include more qualitative elements in the transparency mechanisms as well as citizen and research-friendly provision of data. • Setting up a single stop shop to provide information on the myriad of funds transferred will be an important step forward to enhance transparency and improve resource assignment under a more competitive basis.

Progress reported on sub-recommendations	T	N	Nature of the action	Bottlenecks identified	The way forward
				transferred found.	
34. Strengthen the State Council for the Evaluation of Social Development by providing it with proper funding and human resources to evaluate public policies in the State of Morelos at a larger scale.	MT	3	The State Council for Evaluation has been strengthened and more resources have been provided to the service. Funding has increased by 34% and the number of programmed policy evaluations has increased from 10 in 2015 to 24 in 2017.	• Budget constraints and prioritisation are the main constraints to further increase the capacity of the COEVAL.	• Be more active in the design of public policies, building on its evaluation experience. • Focus on more long-term objectives with indicators based on outcomes. • Work hand in hand with other institutions to ensure the improvement of the information systems of the state and the quality of data. • Ensuring co-ordination with other government bodies to guarantee feedback loops in policies based on evaluation results. • Ensure enough resources for the COEVAL to reach out for municipalities – training and evaluation.
Recommendation #12: Morelos should improve the management of its own funds, including transfers to municipalities					
35. Undertake an audit of both the tax base and the tax collection mechanisms to improve own revenue collection in the State of Morelos.	ST	1	• The Finance Ministry has looked into further options of increasing revenues, namely via a tax on touristic activities. • The steps taken are positive but the impacts on public finance will remain overall limited.	Increasing tax revenues has three main bottlenecks: • Political cost of reform. • Willingness to pay and administrative efficiency to collect taxes. • The structure of incentives of the national transfer system.	• Continue broadening the tax base. • Establish new taxes (such as the environmental tax in Zacatecas). • Put strong emphasis on enforcement. • Work together with other ministries in multi-dimensional policies that will contribute to reducing informality, the latter in turn should contribute to further raising tax collection.
36. Improve property tax revenue by following a two-step action: first updating cadastres, and then effectively collecting taxes. The state should support municipalities (especially small ones) through technical assistance efforts to update the cadastre. With regards to enforcement, the state	LT	1	• Agreements have been established with municipal governments to transfer local tax collection duties to the state tax administration. For the time being only 2 municipalities have signed the agreement.	• Policies to improve cadastres are still too limited given the order of magnitude of the problem. • Political will, and willingness of mayors to sign the agreements.	• Strive to find agreements with municipal governments to sign agreements. Incentive schemes could be established. • Invest strongly in capacity building and in updating cadastres.

Progress reported on sub-recommendations	T	N	Nature of the action	Bottlenecks identified	The way forward
administration could collect property taxes on behalf of smaller municipalities with low capacity and on the basis of contractual agreements.				• Magnitude of the problem of informal settlements.	• Fighting against informal settlements and enforcing urban planning mechanisms.
37. The state administration should support local governments in increasing revenue from services such as water provision, street lights or garbage collection. A transitory period should be considered to reduce resistance to price increase, and allow the quality of the service to improve.	MT	1	The State of Morelos has been working hand in hand with the municipal governments to increase prices charged for local public service provision, by offering capacitation. They have also offered to sign co-payment agreements for projects of water infrastructure.	• Political cost. • Limited willingness to pay from citizens partially driven by the low quality of public services provided.	• Continue offering periodic training for local finance public servants, in order to achieve systematic collection of local revenues. • Apply recommendations of the review to create a transition phase allowing gradually increases in the price of services while simultaneously improving the quality of services provided. • Implement co-payment system for water infrastructure projects with willing municipalities.
38. Reform the transfer formulas to create incentives based on needs and policy outcomes.	MT	1	Recently created infrastructure and assistance funds direct resources of federal government transfers to specific needs of municipalities.	• Margin of manoeuvre is small [5%]. • Transfer formulas are periodically changed, but disconnected from incentives.	• Monitor the impact of how funds are actually used by municipalities. • Attach spending of funds by municipalities to priorities defined in their strategic plans. • Establish an incentive system for municipalities, which may be based on revenue collection rates in a given period.
39. Resources for productive investments should have a results-oriented assignment mechanism conditional on co-ordination between municipalities.	MT	1	The State of Morelos sought to increase the efficiency of productive investments by creating a Public Investment Unit which manages a portfolio of investment projects realised with municipal governments and evaluates investments.	• Such policies require more investment in planning. • They also require strong evidence to adopt the right policies. • Introducing competitive process re-evaluated over time are also costly politically.	• Co-ordination between the work of the Investment Unit, planning instruments and the output from the work of Human Capital Council could serve to better target investments. • Competitive mechanisms for resources could be reinforced. As presented in the Review, a system such as the one put in place in Brandenburg, which reassigns resources annually based on the evaluation results, could be explored.

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

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