

Planning to address the aquaculture development crisis



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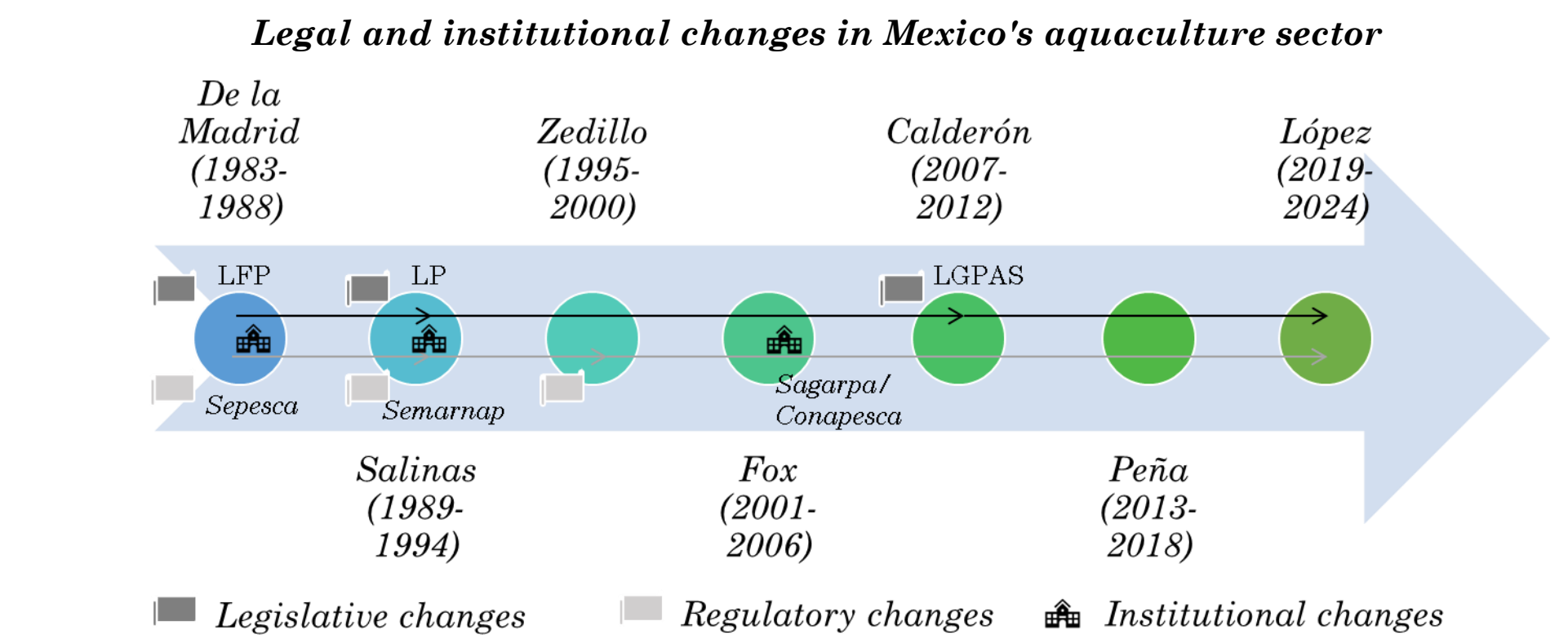
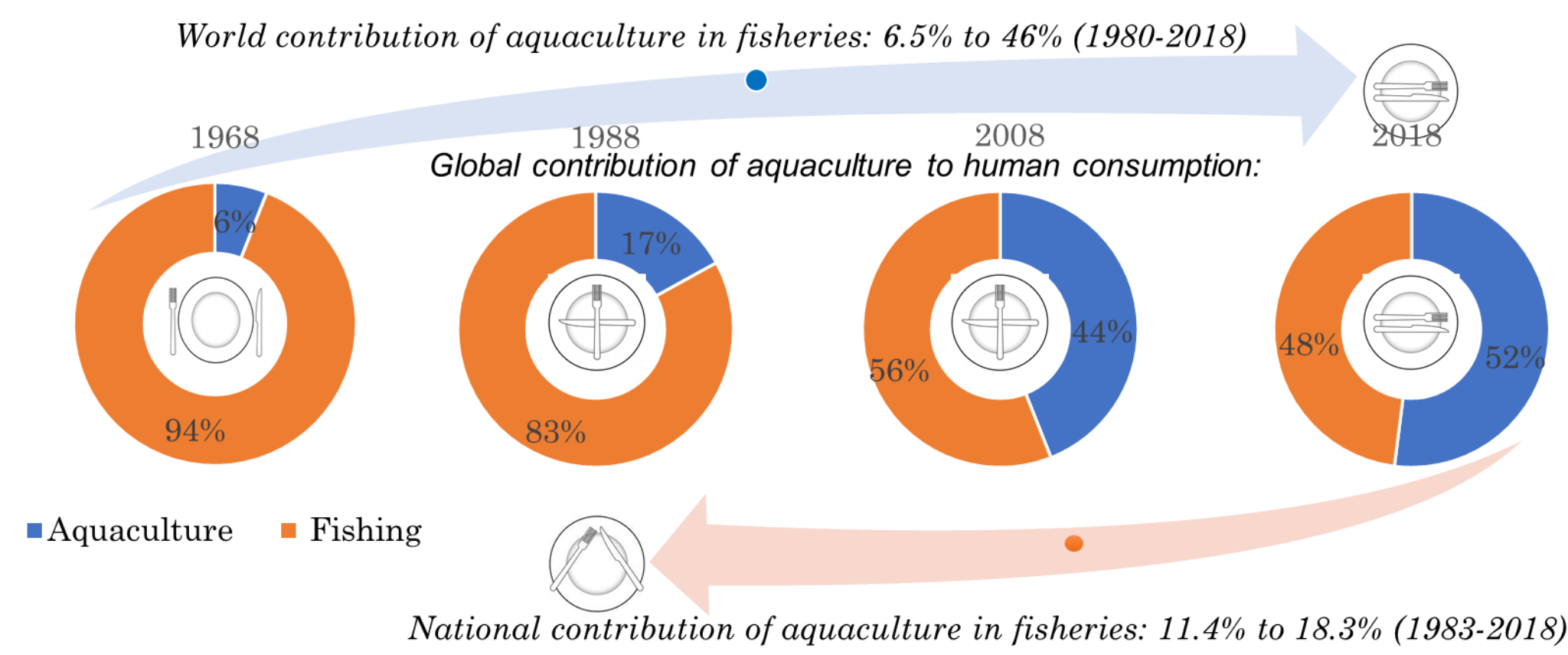
INTRODUCTION:

Mexico ranks seventeenth in the fisheries and aquaculture sector in the world and at the national level has been generating an annual increase in its overall figures. However, from the local point of view, in several of its regions there is a different scenario in aquaculture, with serious problems mentioned by its stakeholders since at least the last decade for the productive sector and in its governing framework. Mexican aquaculture is represented by 56,250 people (19% of the fishing sector). In 2018, an infrastructure of 9,190 farms and 115,910 hectares of land was recorded. In that year, nearly a dozen states were affected by reducing the number of farms that had served as support to produce 404,551 and 395,537 tons of aquaculture products between 2017 and 2018, their highest milestones in aquaculture production volume. This reduction in infrastructure, coupled with the Covid-2019 Pandemic; that coincided with the new guiding changes of the Government of Mexico that came with modifications for the public administration of the sector; impacted on -22.5 percent reduction in production volume for 2019. This year's impact affected 25 of 31 states that record aquaculture production in Mexico, so if these recent problems are added to the sector's stale problems, the aquaculture landscape in Mexico results in a serious crisis that must be overcome. Hence the importance of rethinking the case of Mexico as an area of opportunity to integrate planned aquaculture as a basis for regional development towards the 2030 Agenda.

OBJECTIVE: To evaluate the development of Mexican aquaculture based on a historical review of the last 40 years, in aspects like species, institutional development, and from a regional perspective.

METHODOLOGY: Indicators relating to production volume, value of production, evolution of activity by state, type of species, positioning by entities, economic contribution of fisheries, among others, were grouped into a data base. A coastal regionalization was made in terms of the Pacific region, the Gulf of Mexico-Caribbean Sea and the states without coast.

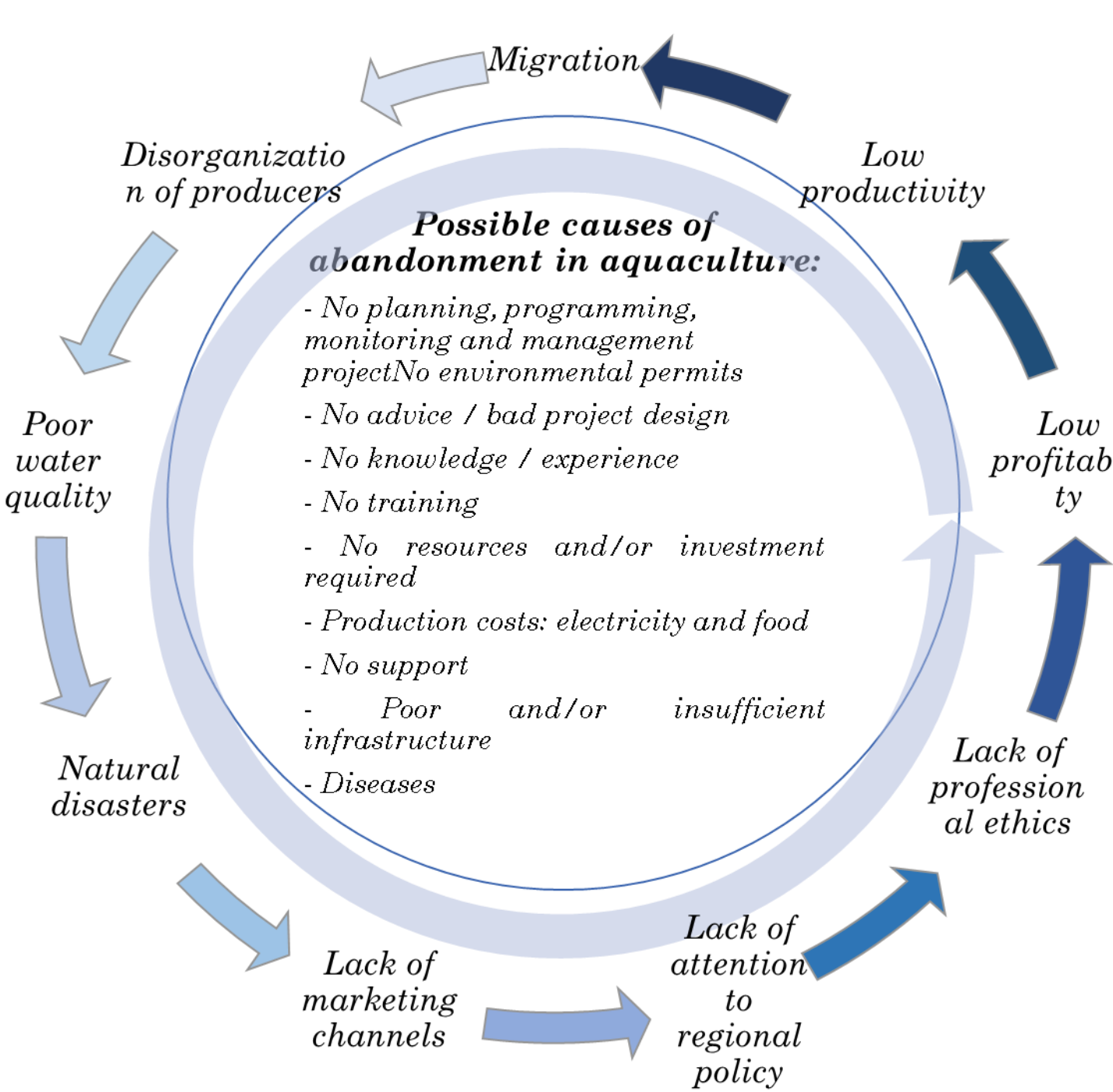
"In percentage terms, today aquaculture in Mexico contributes to fisheries what the world brought 25 years ago. In the world, aquaculture stands out for being closer to reaching 50 percent of the production volume of the products of the fishing sector. However, in Mexico the situation is quite different, whereas it scarcely represents 18.3 percent in almost the same period of growth. Despite the fact that Mexico had proposed to promote the development of aquaculture in the decade of the 80s due to the broad growth it had been having in the world"



"The guiding process in the last 40 years of aquaculture has gone through seven six-year terms of government (including the current one). In this period, three governing legislations have been created with a direct impact on its development, and three institutions. The evolution of aquaculture has gone from not being differentiated in the law (LFP), to doing it gradually, first with a chapter in the regulation of law (LP), and then with greater precepts in the law (LGPAS), but with more than a decade without regulation of the law"

- At the institutional level, Veracruz and Tabasco stand out in Sepesca; Veracruz and Michoacán in Semarnap and; Sonora and Sinaloa in Conapesca.
- At the sexennial level, Veracruz stands out with Salinas and Zedillo, Sonora with Fox and Calderón, and Sinaloa with Peña.

Issues contributing to aquaculture backwardness raised by stakeholders over the last two decades



PROPOSALS

It is proposed to structure the sector's instruments in order to identify the full development of aquaculture for assertive decision-making, allowing it to have sectoral competitiveness aligned with the global trend of its growth.

CONCLUSIONS:

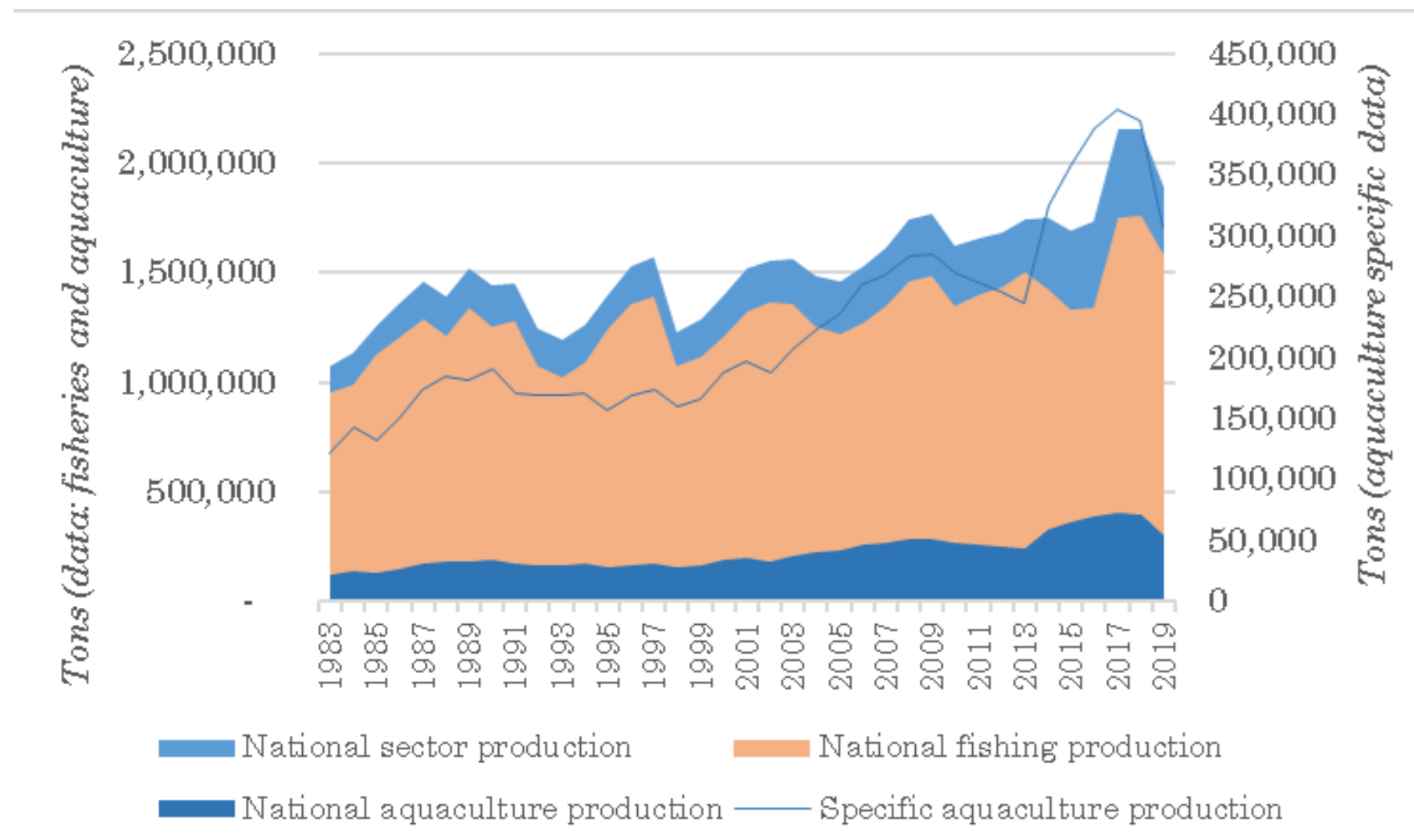
In the case of Mexico, it is necessary to formulate public policies for aquaculture and not only to rely on the promotion of fisheries, if we want to resume the global pace of the contribution of 50 per cent of aquaculture to fisheries. Planned aquaculture can represent a real contribution to Mexico's food problems, but it is needed first to address the areas of development opportunity that have placed it as a crisis that is further complicated by the Covid-19 pandemic. In this sense, to correct this crisis, the suggested planning must revolve around improving the administrative tasks of the public management of aquaculture, its laws and instruments.

At the level of public management, disparities in regional development in aquaculture must be corrected through clear indicators that allow the growth of all regions, states and cultivated species. This requires inter-institutional work by the different levels of government from the local to the state and national levels to achieve more inclusive development, and to solve the lagging problems of farm identification and production reports. At the legislative level, it is proposed to add more inclusive concepts to all forms of aquaculture production practiced in Mexico, as well as their production purposes, including food itself, which is not considered despite being the main destination. Conservation aquaculture is a watershed that allows to save species in Mexico such as Totoaba or white fish and it is important to include them in the law for its correct promotion. It is important to generate an order of priority between these purposes, otherwise the commercial will continue to be privileged as fishing. With regard to the instrument, it is based on the improvements and extension to the processing and representation of aquaculture data within the fisheries yearbook. The progress of aquaculture will be achieved to the extent that it occupies a place in decision-making, so that its rectory is better differentiated and valued. Hence the need to improve its indicators not only in commercial food species but also in ornate species. It is important to make the most precise differentiation between aquaculture and the aquaculture fishery carried out by fishermen and to include more indicators on their development, such as the area, species sown and their permitted areas, in order to generate an order in accordance with Mexican environmental policy.

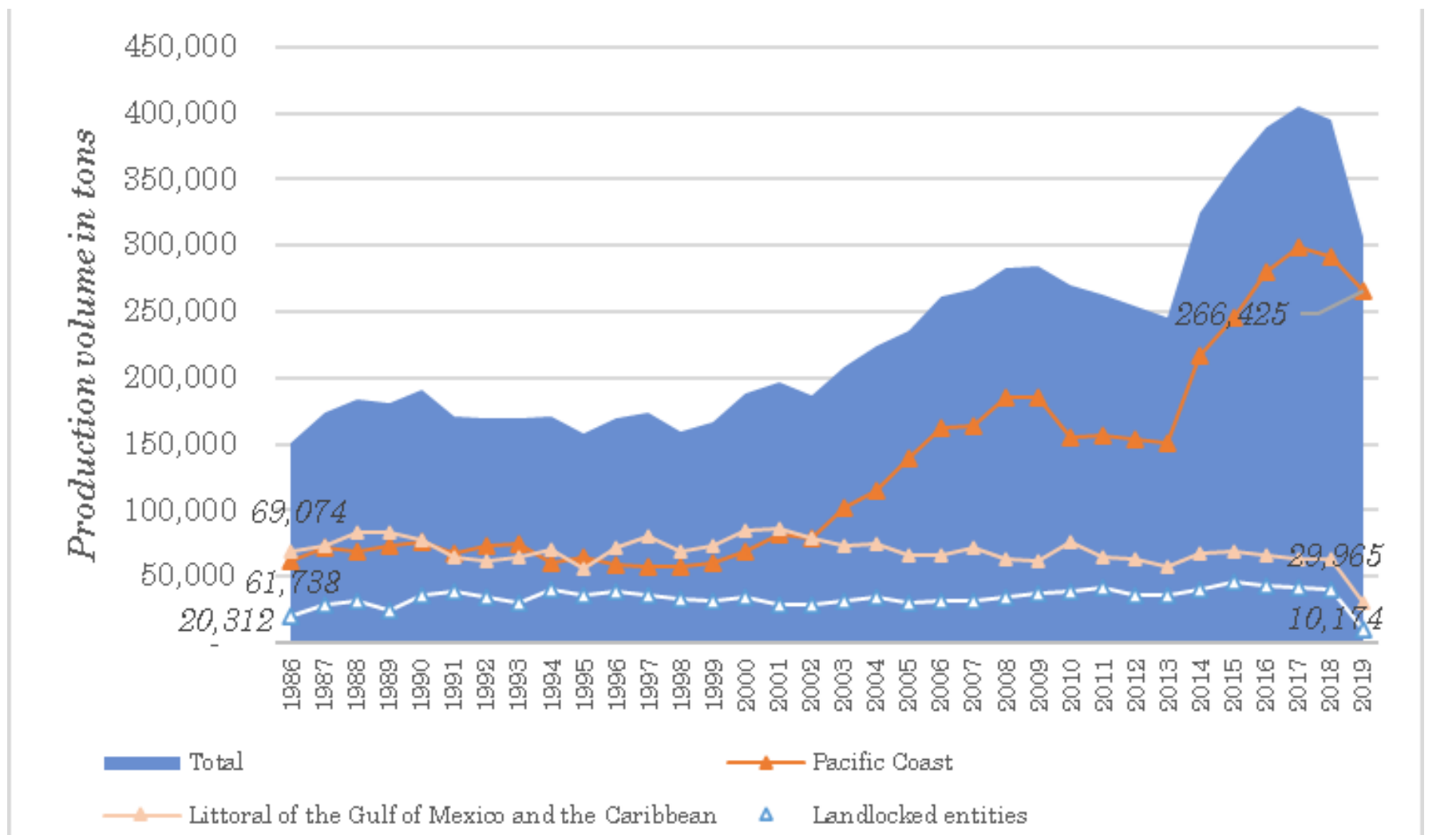
RESULTS:

Results show that since the 21st century the Pacific region has concentrated the production, unlike the Gulf region, which had previously maintained fairer competitiveness. The review reveals that several states face crises in the sector as well as in their species. The state that had been a leader in aquaculture production has had a decline in production over the past two decades.

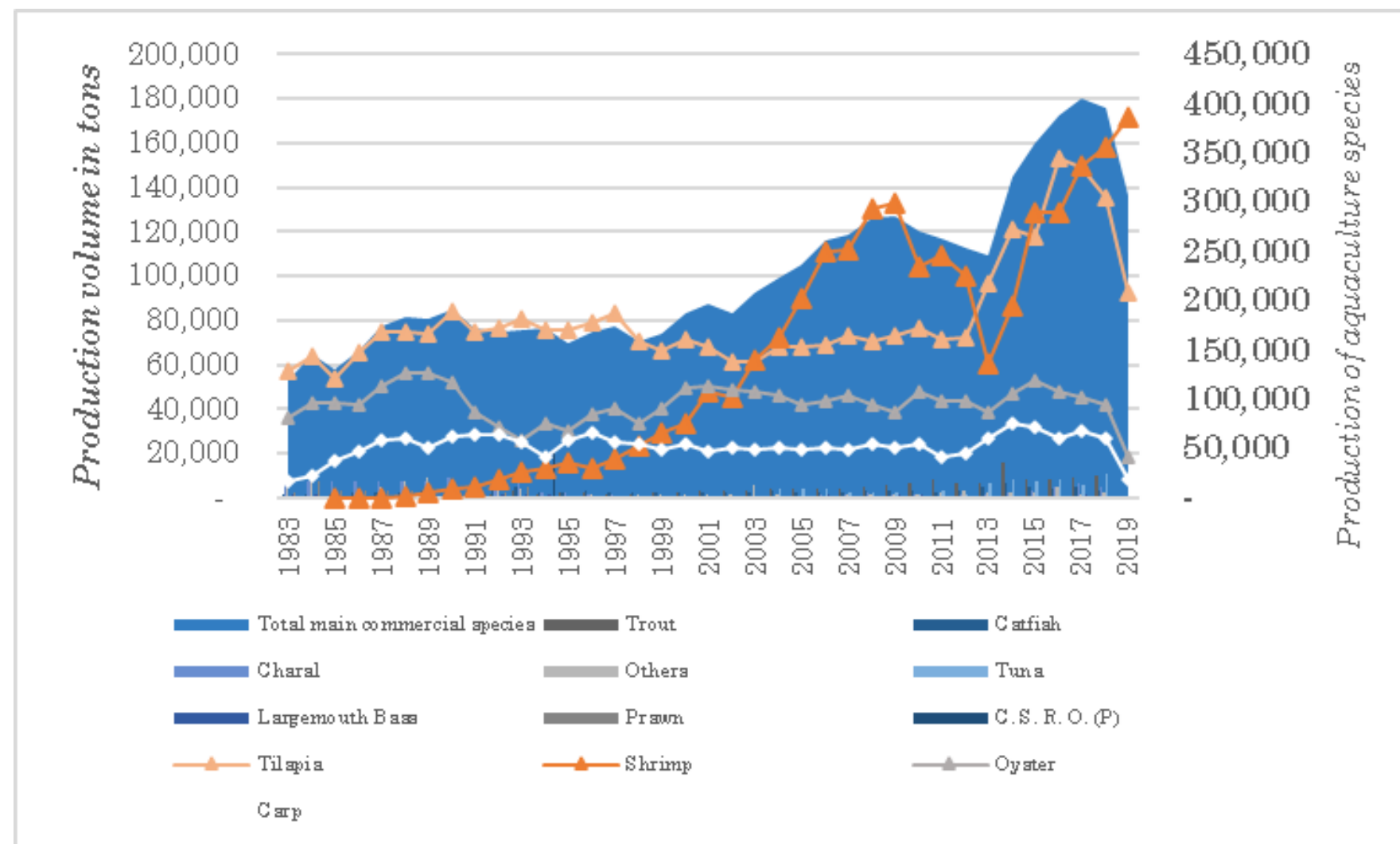
Production of the fishing and aquaculture sector in Mexico



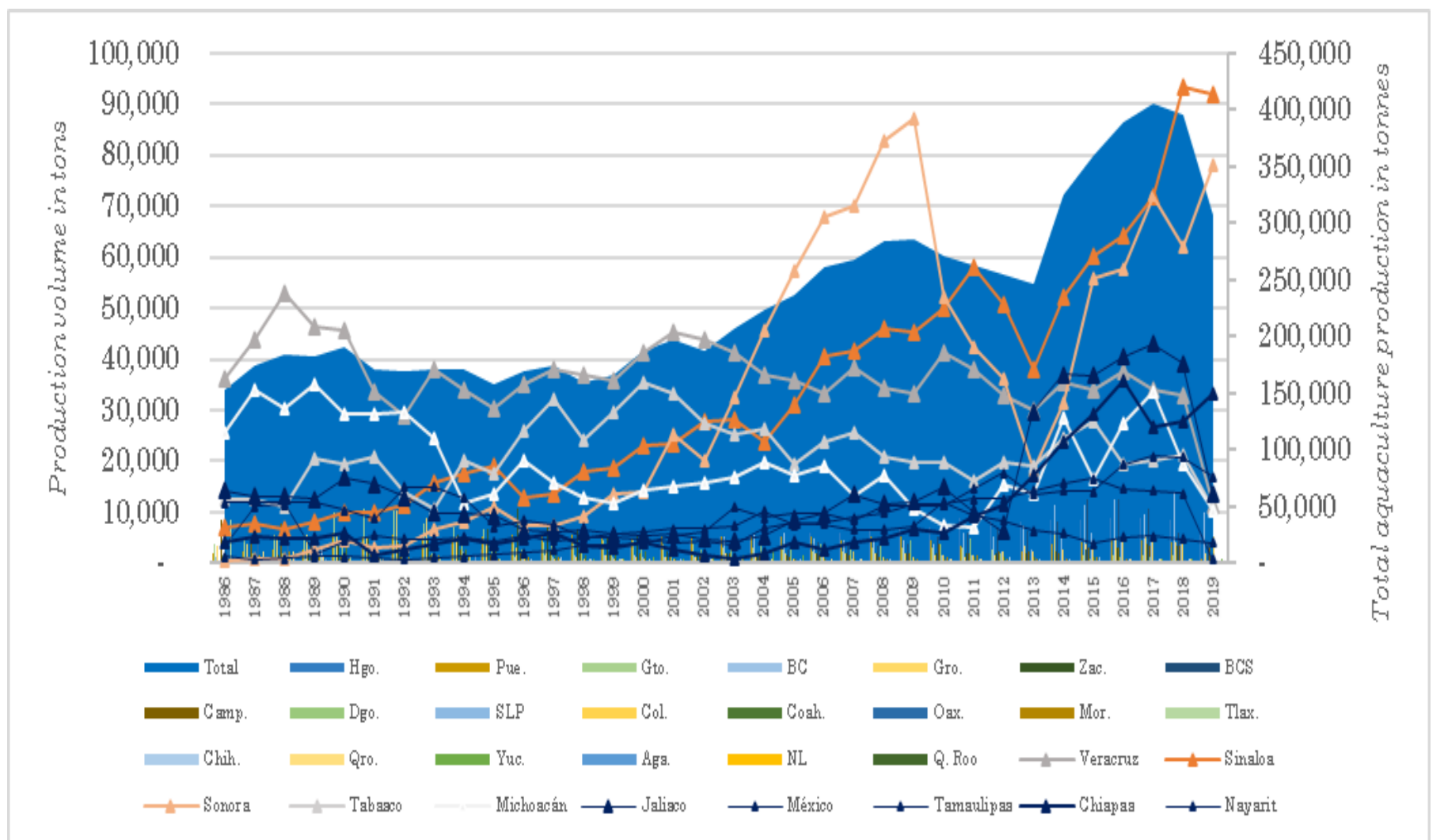
Distribution of aquaculture production in the regions



Distribution of aquaculture production in species



Distribution of aquaculture production in the states



"Only two species follow prolonged upward production trends (shrimp and trout) and one has consecutive decline (prawn). Eleven states show stagnation by concentrating their production in the 1980 and 1990 decades"

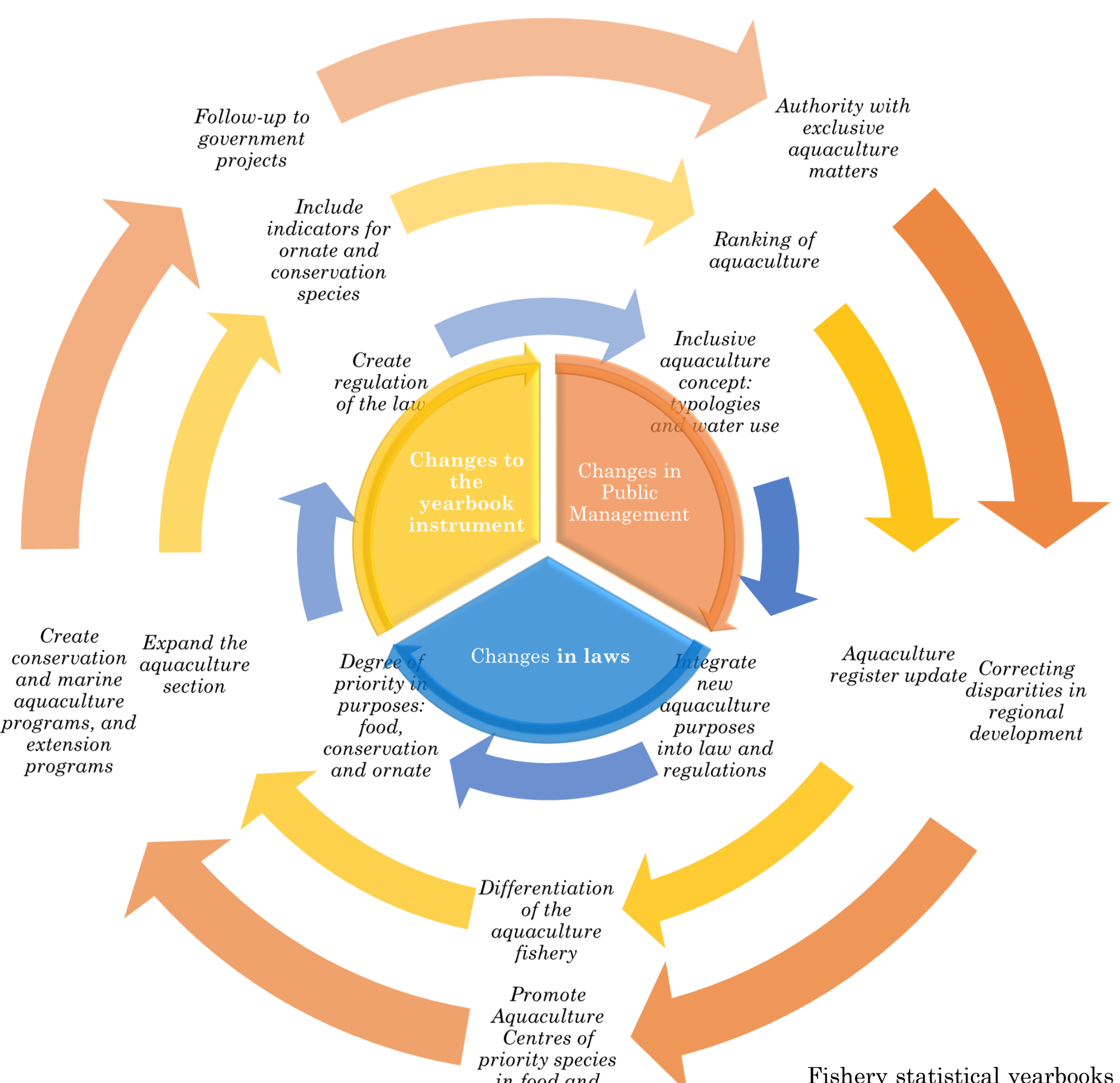
Main historical in aquaculture: "We identified 17 of 179 trends in species of commercial interest or systems established in states that had hikes, and 97 out of 179 had declines; but in a more general analysis, 83.2 percent show crisis for longer and 16.8 show acceptable results"



PROPOSALS

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Some of the opportunity areas which were found out are:



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