

ORIGINAL ARTICLE

# The New Galapagos: Tourism and Development for Northern Peru

Las Nuevas Galápagos: Turismo y Desarrollo para el Norte del Perú

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## ABSTRACT

In the Piura-Lambayeque Region, in Northern Peru, there are two groups of islands near the Pacific Coast. One is Lobos-de-Tierra and the other one is Lobos-de-Afuera, because it is located further away into the ocean. This paper proposes constructing an artificial floating island between the two groups of islands mentioned above. This would create a larger cluster of islands that will serve only as a sanctuary for the sea lions and other marine species that live in the area, such as penguins and other birds. This cluster of islands could become the Peruvian Galapagos.

The costs of the investment project are calculated by using the data from similar endeavors in China or Denmark or The Maldives. We may assume that the unit costs for the Artificial Floating Island in Peru are equal to the unit costs of another similar project of artificial floating islands in those countries. The benefits of this investment project will be the new income generated by the new cruise tourism. We may assume that the benefits of the project may be estimated from the actual tourism revenue from the Galapagos Islands.

The paper advances that the benefit-cost ratio will be positive and the internal rate of return will be higher than other tourism projects already approved by development banks, such as the Inter-American Development Bank.

The new project will also help relief from the situation Peru is facing with the global COVID-19 pandemic. Economic recession is plaguing Peru in the 2020s and amounts as one of the worst economic situations of the last 100 years. Also, the global economy is in contraction in Europe and other regions. In fact, the aftermath of the pandemic will be considered as years of economic development lost for some countries like

Peru. Specifically, receptive tourism in Peru is in danger of extinction after the pandemic. Actually, Peruvian tourism, which gives employment to 1.4 million people who are mainly women, is in collapse.

Also, this article aims to make proposals to help tourism sales recover their position as the most important section of service exports in Peru. The proposal is intended to encourage a nontraditional tourism on the tropical coast of Northern Peru that should complement the traditional archeological tourism. The conclusions make emphasis on the fact that, at present, Peru is not exploiting its comparative advantage in tourism, which could become a leading sector of the economy. Finally, our thesis is based on the notion that, from 2021 onwards, the recovery of the Peruvian economy must necessarily be based on exploiting the recovery of external demand rather than putting our trust in domestic demand growth.

## 1. Introduction

The situation of the Peruvian economy, during the 2020s, is rather weak. This performance is affected by a global epidemic and a global economic recession (IPE, 2020).

These levels of economic recession have not occurred in Peru since the economic crisis in the 1980s (Boloña, 1993). Neither the 1998-1999 recession nor the 2008-2009 slowdown have faced a crisis of such magnitude.

During the 1980 crisis of Alan Garcia's first government, despite an inflation rate that reached two million percent (Boloña, 1993), the reduction in GDP did not go to those extremes. According to the aforementioned author: "In the last three years of the 1990s decade, there has been a fall of more than 20% of the product" (Boloña, 1993, page 17). This is equivalent to an annual decrease of 6.5%. Compared to this, Covid-19 crisis may reach an annual decline by around 15% in 2020.

The recessionary period 1998-999 in Fujimori's Government did not reach double-digit GDP declines. Actually, GDP fell by 8.8% in 1998. The global financial crisis of 2007-2008 in Alan Garcia's second government led to a stagnation in the economy which grew by only 1%.

The COVID-19 pandemic has already generated recession in the G20 countries. The Economist Intelligence Unit has reviewed its growth forecast for all countries globally, starting from the coronavirus pandemic. The results point to a very serious situation. The G20 group of developed countries will record a recession for the year 2021. The global economy will contract by about 2.5%.

The crisis poses an unprecedented risk to Latin American economies since the coronavirus has created a supply-demand shock on par with a global financial collapse.

The direct economic impact will be great. In particular, this will cause serious damage to Peruvian exports. How will COVID-19 impact Latin America? Latin America's export value contracted 3.2% in the first quarter of 2020 compared to the same period in 2019. The contraction would be higher for Peru (IDB-INTAL, 2020).

Another clear impact of the Covid-19 epidemic is the reopening of the debt crisis in developing countries. Only facing the coronavirus pandemic will demand extraordinary fiscal efforts because of lower tax revenues and lower tax collection because of higher expenses on health and social assistance. Governments in all developed countries have confirmed large increases in public spending and therefore higher public debt in their fight against coronavirus, representing an enormous problem for the poorest countries like Peru. One conclusion is that increased debt would be better than the widespread destruction of productive capacity caused by the epidemic. In the end, the public debt of all developing countries will increase widely through year 2020. Sovereign debt crises are a fact. The only question begins with when and who. A report presented by the Economist Intelligence Unit (The Economist, 2020) projects the impact on the increasing levels of public debt in emerging countries from Latin America and Asia and developed countries such as Italy and Spain.

In short, the perspective of the global economy looks weak for the 2020s decade. Because of the coronavirus pandemic, an acute contraction of the global output is expected to occur. It seems that 2020 and 2021 will be years of economic growth

lost. Global GDP will not recover to pre-coronavirus levels at least until 2022. The additional risk is that a second wave of the pandemic may derail economic recovery again. Also, a delay developing vaccines would also pose additional risks. (Economist Intelligence Unit, 2020).

The special situation of receptive tourism, caused by the direct effect of the pandemic is as follows. Foreign tourism in our country is currently endangered. The World Travel & Tourism Council estimates that, in the baseline scenario, foreign visitors travelling to Latin America will decline by 45% in 2020 (WTTC, 2020). Both formal and informal tourism industry in Peru used to generate \$22 billion, representing 9.7% of GDP (Canatur, 2020). According to the Ministry of Trade and Tourism, the pandemic and the health emergency reduced to nothing the activity of the tourism market, which employs 1.4 million people who are mainly women (El Comercio, 2020).

All the facts presented in this introduction helped us to set the objectives of this article, which aim to highlight and propose, as a stated purpose, that external sales of tourism services regain their position as the most important part of service exports in Peru. The negative evolution of total exports of goods and services in Peru during these years urgently requires looking for alternatives to generate foreign exchange and employment. Alternative tourism projects like the one presented here must be closely linked to both economic revival and positive export recovery in different regions of Peru.

## **2. Evolution of Tourism in Peru**

Receptive tourism was the main area of international trade services in Peru before the pandemic; therefore, the comparison between its dynamics and the growth of total exports presented below is very important.

This study suggests that the impact on exports is the thorniest and most complex legacy that this pandemic is leaving to us. However, it should be noted that the fall or slowdown in external sales were occurring since the Humala and Kuczynski governments in Peru. The economic variable was the one that fell the most during the five-year period of Humala's government, becoming an indicator that recovered very slowly over the course of the current government. This was the case for both types of external businesses, for both exports of goods and services, including international tourism in Peru.

The evolution and analysis of exports of goods and services is presented below. In both cases, the evolution of the indicators can be observed. The decline of the exports is the variable that best explains the economic slowdown in recent years. In 2012, 2013, and 2014, exports declined exponentially by -2%, -9% and -11%, respectively. Exports continued plummeted downwards by -19% in 2015, compared to the previous year. Exports dropped in all years of Humala's government (2012–2015) (Torres-Zorrilla, 2015).

The export debacle of those years is explained by the unfavorable international context of emerging economies. International prices for raw materials, especially metals, decreased during that period. In addition, the economic slowdown of China and the BRICS countries reduced the demand for Peruvian exports. The recurrence of the crisis in Europe and the United States was another reason for the negative impact of export behavior in that period. (Torres-Zorrilla, 2015). Finally, exports stagnated in 2016, recovered slightly from 2017 to 2018, and fell again in 2019.

Another indicator, and not less important, is the economic slowdown during the current millennium. Evolving the GDP by

sector of the economy shows two different periods. There was a very favorable growth during the first period 2001-2013, but that dynamism slowed down during the second period 2014-2019. The average growth rate of the economy showed 6.8% annual average from 2001 to 2013 (excluding year 2009 as being an outlier observation). Unfortunately, the average growth rate was 3% per year during the period between 2014 and 2019. Our thesis is that export growth is the main determinant of the dynamics of the national GDP, but unfortunately, export growth weakened in the second period.

Besides the worrying situation of deteriorating exports and poor economic growth during the last five years, which is very different from the period 2001-2013, we are also facing the serious crisis caused by Covid-19 in 2020.

As a preview of our further discussion, the eventual recovery will have to face the decreasing exports and the serious slowdown in GDP growth, designing a shock in exports and investments. However, we must keep in mind that the impact of higher exports on GDP will be immediate, while the impact on increased investment will take time to become effective.

In short, good export performance will be the most important variable that will reverse the decline in economic growth (from 6% to 2%) that occurred between 2013 and 2019. The challenge consists of designing strategies to correct the decline of the exports and reach the highest export levels of the previous decade in the medium term.

Regarding the Tourism Sector of Peru, in this section, we review the recent development and analysis of services exports before the Covid-19 pandemic. It is a fact that the tourism business is the main area of service exports. This analysis includes both traditional archaeological tourism and non-traditional tourism.



According to the National Institute of Statistics and Informatics (INEI), more than 3.8 million tourists arrived in the country in 2015. If we take some data from 2002 when the flow of tourists was 1.06 million, we can calculate an average growth of 11.3% per year, being a comforting situation. For the fourth consecutive time, Peru has also been chosen by the World Travel Awards as the best culinary destination in South America (Torres-Zorrilla, 2016).

Evolving the annual revenues in receptive tourism in recent years, using data from the Peruvian Foreign Trade Society, Comex, Peru (Canatur, 2019 and OECD,2022) is presented in Figure 1.



Figure 1. Receptive Tourism, Peru: Annual Sales

The data shows that receptive tourism in Peru is in danger of extinction after the COVID-19 pandemic. Thus, Peruvian tourism, which in 2019 gave employment to 1.4 million people, who were mainly women, is in total collapse. The annual sales declined by 80% respect to 2019 and 90% respect to 2019 in the years 2020 and 2021.

The above data also reinforces the view that Peru's tourism potential is being under-exploited. Although we have great comparative advantages for the development of this sector, as well as twelve places listed by UNESCO as world heritage sites, the international tourist arrival is low. In 2015, more than 850 thousand people visited Machu Picchu, but the figure is less encouraging in the rest of the country. The most visited places were: Reserva Paracas, Nevado Huascarán, Manu and Nazca Lines. The places that received fewer visitors were sectors Tombs of the Lords of Sipán, Chavín de Huantar, Kuélap Walls, Caral, Rio Abiseo National Park, and Chan-Chan Citadel. It looks like we are sitting on a "gold bank" that we cannot exploit. (Arroyo, 2015).

However, other Latin American countries with lower historical and cultural heritage receive more visitors. In 2015, Brazil topped the list with 6.4 million tourists, followed by Argentina with 5.9 million visitors, and the Dominican Republic with 5.1 million (Arroyo, 2015). Mexico, which has a pre-Hispanic and colonial past similar to Peru, welcomed more than 29 million tourists in 2014. This allowed them to get tourism revenues that reached \$16 billion, compared to the \$3 billion reached by Peru (Arroyo, 2015).

Comparison with neighboring countries is most important. Ecuador receives 3 million foreign tourists annually, Colombia surpassed 4 million tourists annually, and Chile received 3.2 million visitors in 2014. The most probable explanation is that the Galapagos Islands in Ecuador and San Andres Island in Colombia are very important tourist destinations, as well as the Easter Island in Chile. It may seem that Peru lacks a resort island.

The corollary is that Peru is not fully exploiting her historical, geographical and biological wealth, which is the basis for the economy in many neighbor countries.

### **3. The Piura-Lambayeque Project**

A proposal for receptive tourism in Peru may include an adventure and relaxation tourism on tropical beaches as a complement to traditional archeological tourism, which may also require an island that can compete with the Caribbean islands.

Consequently, we recommend analyzing including some ancient Guano islands of Peru as probable tourist destinations. Specifically, we suggest starting with the Lobos-de-Tierra tropical island, a guano island located off the coast of the Piura-Lambayeque region and the nearby Lobos-de-Afuera Islands. These two groups of islands could become an ecological park that, respecting its current reality as a refuge for guano birds and sea lions, becomes a habitat of numerous species including, for example, tortoises similar to Galapagos tortoises. Moreover, these islands could be joined by a nearby artificial small island to become a larger cluster of islands, linking them with natural or artificial bridges similar to those that link the archipelago in the China Sea or Denmark.

A reforestation of certain arid areas of the Peruvian coastline should be considered as a pilot project for this process. As mentioned, receptive tourism in Peru is in danger of extinction because of the COVID-19 pandemic, and activity in the tourism market, which gives employment to 1.4 million, mainly women, is in total collapse. Expected recovery of receptive tourism is proposed in this Pilot Project in the Piura-Lambayeque region at the Northern coast of Peru. The idea is to upgrade the

existing ecological park, so that it becomes a habitat similar to the Galapagos Island in Ecuador.

The location of the Piura-Lambayeque Pilot Project is presented in figure 2 below. The two archipelagos (Lobos-de-Tierra and Lobos-de-Afuera) are located off the Piura-Lambayeque coastline. An artificial island between the two islands will create a larger cluster of islands. The new archipelago could be visited by tourist cruises and could become the “Peruvian Galapagos”.



Figure 2. Map of Piura-Lambayeque Pilot Project at Northern Coast of Peru.

In summary, the Piura-Lambayeque tourism project will be located at the “Lobos” Islands. The idea is to upgrade the existing ecological park, so it becomes a habitat similar to the Galapagos Islands of Ecuador.

Expectations are that tourists from developed countries will prefer Cruise Tourism because it will be regarded as safer after the COVID-19 Pandemic. This is because arriving by plane to Latin American cities will be, for the medium term, considered risky and dangerous. The high informality of our countries, whether real or perceived, will offer no real guarantees to tourists, because they will continue for a time in fear of risk of contagion of Covid-19 mutations, and they may avoid hotels and sightseeing in cities in our exotic countries.

The argument here is that revival of the Peruvian economy must necessarily be based on the revival of external demand, rather than counting on the growth of domestic consumption. This is tantamount to say that only a revival of exports will reverse the decline in economic growth, as expectations of a significant recovery in domestic demand are nil. This is true for good exports and tourism exports.

This project could be complemented by a Decameron-like hotel built in front of the new Lobos Islands. Tourists staying at this hotel could combine their stay on a heavenly beach with visits to the Lobos de Tierra ecological park through a paradise that shows them the natural resources of Peru. It would be accompanied by natural history museums and archaeological museums with a tourist attraction that receives visitors 365 days a year because of the tropical climate that exists at 5 degrees of south latitude in which those islands are located.

These Lobos de Tierra islands in Piura could be visited by tourist cruises with American, European, and Asian visitors. Consequently, they could become the Peruvian “Galapagos Islands”. The reviewed resort could compete with Cancun in Mexico or Varadero in Cuba.

In particular, cruise tourism will be considered safer after a Covid-19 vaccine is obtained. The expectations are that tourists from developed or emerging countries, either European or Asian, will prefer boat tourism over arriving by plane to Latin American cities that are considered risky and dangerous. The high informality of our countries, whether real or only perceived as such, offers no greater guarantees to tourists because they will continue with fear of Covid-19 contagion for a long period because of mutations in the virus, avoiding hotel accommodations and sightseeing in cities from exotic countries.

The key question is what capital resources the proposed project would develop with? It would definitely not be with public resources from the regional Government of Piura-Lambayeque, but through Public-Private Partnerships that have been so successful in international experiences.

Funding for tourism projects would be financially feasible through a Korean Consortium or Chinese Consortium protected by the FTA between Peru and those countries. If it came true, the project would offer the inhabitants of these Asian countries and American and European tourists a place to enjoy tropical holidays during the icy winters in the Northern Hemisphere.

#### **4. Cost Analysis of the Piura-Lambayeque Project**

Evaluating the Tourism Project in the coastal area of the Piura-Lambayeque region requires a cost-benefit analysis of the proposed project.

The costs of the investment project are calculated by using the data from similar endeavors in China or Denmark or The Maldives. We may assume that the unit costs are equal to the

unit costs of another similar project of artificial floating islands in those countries.

A low-cost estimate of a one-square-kilometer artificial floating island is variable, but for this paper it is estimated as near half a million US dollars. Thus, the total cost of the artificial-floating-islands that would increase the area of the “Lobos Islands” by 80 square kilometers would be rounded to a \$50 million investment, after some additional infrastructural costs are included. (ChatGPT.com, 2024a).

Actually, the technology of AFI is not new. Thus, the Uros people built AFI on Titicaca Lake, thousand years ago. The estimate of the cost of one acre of an AFI is variable. However, we should remember we are not proposing a new artificial island for urban expansion. We are not considering building an airport or new housing developments on the island. The new artificial floating island would be only used as a sanctuary, as a natural refuge for sea lions and birds. The costs will probably be lower than AFIs for other projects.

One study on the Uros islands advances that no capital expenditures are really needed for development of a new island on the Titicaca lake at Southern Peru, because the investment costs are almost exclusively community labor. Likewise, a new AFI at this day and age could be developed by using a couple of discarded oil platforms as the basic axis structure for a one-acre AFI in the usually calm seas of Northern coast of Peru.

As a conclusion, we assume, for the Piura-Lambayeque project, that we may estimate the costs of the AFI from the unit costs of similar projects of artificial floating islands in other countries, after adjusting for the special conditions of this project.

## 5. Benefits of the Piura-Lambayeque Project

Regarding the benefits of the “Lobos Islands” project, we should consider that the present actual land area is about 160 square kilometers and that the project would increase this area to about 240 square kilometers. This total includes the new AFIs to be built.

Considering the new land area and its influenced maritime area, the “Lobos Islands” project will be around 5% to 8% of the total area of the Galapagos Islands, but the possibilities are unlimited. As an example, a new AFI, north of the Lobos Islands, would further and easily increase this area.

The benefits of the Lobos Project could be estimated as 5% to 8% of the tourism revenues generated by the Galapagos Islands nowadays. The total tourism revenues to Ecuador from the Galapagos Islands are estimated as about \$350 million dollars annually. Thus, the corresponding benefits of the “Lobos” project would be around \$20 million annually. (ChatGPT.com, 2024b).

The Galapagos Islands have tourism as a major source of income. The archipelago welcomes near 300 thousand tourists per year. Thus, in 2019, the Galapagos received 271 thousand visitors, but tourism plummeted by 96% in 2020 when COVID-19 halted foreign visitors. Of the \$2.3bn in sales in 2019, only \$705 million remained in 2020, a 69% decrease. Note that this is similar to the performance of tourism revenues in Peru. The total area of the Galapagos amounts to 7 thousand square kilometers and the archipelago islands are located at about 970 kilometers from the Ecuadorian coast. Finally, the Galapagos islands are located over the line of the Equator.



As a conclusion, we assume, for the Piura-Lambayeque project, that we may estimate the project benefits from the actual tourism revenues that Ecuador obtains from tourism to the Galapagos Islands.

## 6. Benefit-Cost Analysis of the Project

The cost benefit analysis of the “Lobos Project” should consider the above estimates of total costs (\$50 million) and future revenues (\$20 million per year). Table 1 resumes the data and considers a project time of 12 years in the future.

Table 1. Cost-Benefit Analysis of the Lobos Islands Project (million \$)

Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	
50													Costs
	20	20	20	20	20	20	20	20	20	20	20	20	Benefits

Source: Author’s estimates.

The IRR of the project is estimated at 35%, which is an acceptable result for this type of tourism project. In addition, the cost-benefit analysis should take into account the externalities generated by this type of tourism projects. A side effect of the Tourism-Piura project are the income multipliers that the project generates on the production and demand for goods and services in the Piura Region. A recent study presents these indicators, stating that the result of the analysis is that multipliers in service sectors such as Tourism are higher than industrial multipliers and even much higher than commodity multipliers in agriculture, fishing and mining. In addition, the study specifically states that Tourism ranks first in the sector ranking, with the highest level of income and employment multiplier. The income multiplier reported for the Tourism sector is equal to 1.93 (Torres-Zorrilla, 2019).

The indicated results of the multiplier study in Peru means that the Tourism Project in Piura-Lambayeque involves much larger social benefits than the returns to the investors who funded the initial project. Thus, this investment to promote tourism in Piura will result in higher employment levels, approximately the double compared to the direct jobs offered by the company that carried out the initial project.

This means that the Tourism-Piura pilot project has greater “social” benefits than the “private” benefits of the initial project. These social benefits are “externalities” of the project that are not considered in the analysis of the projects of companies. A theoretical discussion of externalities is presented in Mankiw (2014) and Tietenberg (1992).

A future extension of the study would be the development of a method for measuring the economic and social impacts of these externalities. The questions we need to ask ourselves are: how much would the benefits of the pilot project increase if social benefits or externalities are considered? How many points would the Internal Rate of Return of the project increase if the social benefits of the multiplier are considered?

This does not mean that the company needs to modify its project analysis. Technically, the company should continue to apply only private costs and private profits in the analysis. A government agency would be required to consider social benefits and other social costs. Other social costs could deal with the environmental damage of a tourism project. The social benefits would be the exceptional returns from a project which are reflected in its multiplier effects on employment, consumption and new investments which are generated in the regional economy where the tourism project is installed.

If a project generates greater social benefits than business benefits, economic incentives that increase such investments could be justified. This would not have to be direct subsidies to companies. These incentives could take place through new public investments that address deficiencies in regional infrastructure or in other areas. This will allow more companies to be attracted to invest in new tourism projects in the region.

The Net Present Value Formula can be used to make a social cost-benefit analysis of a tourism investment project. This NPV formula must be modified to include the additional social benefits and costs associated with the investment project.

## **7. Conclusions**

The revival of the Peruvian economy must necessarily be based on meeting the revival of the external demand rather than counting the growth of domestic consumption. The argument is that the short-term projections of Peruvian growth are today the lowest in the entire Latin American region and much lower than the projected growth for developed countries and for the world as a whole.

During the last two decades, Peru has followed a pro-export economic model, timidly copying the Chinese model, with excellent results. This is reflected in the strong growth of Peruvian exports over the recent years. Today, Peru exports some products that we did not even know about, as with blueberries. (Torres Zorrilla, 2020)

This exporting model should not be changed in the aftermath of Covid-19, given the fast recovery of demand in the international market. The world will continue to demand raw materials and exotic natural foods such as avocado, mango, and blueberries. We are sure that most Peruvian economists, from every political

orientation, will agree with the objective of underlying the current Peruvian export model, which favors small exporting companies in the agricultural sector in the Coast and Sierra regions of Peru, generating both indirect employment and so many multiplier effects (Torres, 2015). Our thesis is that export growth will be the main determinant of the Peru's GDP in the near future.

Another conclusion is that we are not fully exploiting our historical, geographical, and biological wealth. Tourism, in particular, can become an engine of economic growth. The solution for Peruvian receptive tourism can be a relaxing tourism on tropical beaches, complementing traditional archaeological tourism. (Torres Zorrilla, 2020)

The cost- benefit analysis of the Piura-Lambayeque project presented here gave optimistic results. The paper advances that the benefit-cost ratio will be positive and the internal rate of return will be higher than other tourism projects already approved by development banks, such as the Inter-American Development Bank.

The new project will also help relief from the situation Peru is facing with the global COVID-19 pandemic. The economic recession that is plaguing Peru in the 2020s amounts as one of the worst economic situations of the last 100 years. In fact, the aftermath of the pandemic will be considered as years of economic development lost for some countries like Peru. Specifically, receptive tourism in Peru is in danger of extinction after the pandemic. Actually, Peruvian tourism, which gives employment to 1.4 million people who are mainly women, is in collapse.

This article aims to make proposals to help tourism sales recover their position as the most important section of service exports in Peru. The proposal is intended to encourage a non-traditional tourism on the tropical coast of Northern Peru that should complement the traditional archeological tourism. The conclusions make emphasis on the fact that, at present, Peru is not exploiting its comparative advantage in tourism, which could become a leading sector of the economy. Finally, our thesis is based on the notion that, from 2021 onwards, the recovery of the Peruvian economy must necessarily be based on exploiting the recovery of external demand rather than putting our trust in domestic demand growth.

Also, note that, although this Artificial Floating Island project is located in Peru, its conclusions may also be valid for future similar studies in other South Pacific countries, such as Colombia and Chile.

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