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## Mediterranean Islands and the Challenge of Innovation: Learning From the Case of the Chinese Province of Hainan

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**Abstract:** *Mediterranean islands heavily depend on tourism as their main economic resources. This development path has taken over from a poorly industrialized, agricultural society, and has insured economic integration to these islands. However, Mediterranean insular regions still suffer from a number of developmental issues leading to economic retardation vis-à-vis continental regions. Tourism has strengthened their peripheral status. Hainan, an insular province of China has experienced a similar situation. However, although tourism still remains a major economic resource for Hainan, new policies have been implemented to diversify the local economy and develop innovation-led activities on the island. Traditionally, peripheral regions are not considered as innovative regions because of several obstacles (e.g.: remoteness, social particularisms) (Soete, 1997). To be efficient, innovative policies should not only support technology and research, but also other economic aspects of the innovation process (Landabaso, 2003). Does it mean that decentralization is required to transform peripheral islands into innovative society? Or is the central government more likely to implement innovative policies? This paper will attempt to explore the several paths followed by Hainan to develop innovation, draw the limits of this policy, and question whether or not similar measures may be adopted by Mediterranean islands. The author argues that development of a private sector is the key factor for innovation in insular territories.*

**Keywords:** *China, innovation, public sector, insularity, decentralization*

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### 1 Introduction

Mediterranean Islands have become major world destinations. Every year, Malta, Ibiza, Corsica, Crete attract millions of visitors. These islands are well known for their sun, beaches, “art de vivre” and culture. The development of mass tourism in the Mediterranean since the early 60’s has insured a relative prosperity to these islands, but on the other hand, has caused several issues such as pollution, tourism saturation, social tensions between islanders and visitors. It has also increased their economic dependency. Their economic structure is dominated by the tourism sector and related industries (construction, real estate...), and per consequence is exposed to multiple external threats: seasonality, weather conditions, or high competition. As a result, Mediterranean islands seek for greater diversification (Reiffers, 2000). This one can be obtained firstly within the tourism sector by offering a larger range of tourism products: most Mediterranean islands have now emphasized their cultural and historical offer. Diversification is also about developing other sectors. This latter aspect is more challenging for Mediterranean islands, because they are traditionally unindustrialized and lack the available lands necessary to implement large projects. The development of innovative industries, based on clean energies may solve this issue. However innovation policies need several conditions to succeed, especially regarding core-periphery relations. Friedmann (1966) argued that core regions transmitted “impulse of innovation to the peripheries”, this proved to be right in the case of Mediterranean islands. Most of Mediterranean islands are not independent, but are subnational entities, except Malta and Cyprus which are sovereign states. They are not all granted the same degree of autonomy. The Spanish Balearic islands form an autonomous community. In Italy both Sardinia and Sicily are autonomous regions. In more centralized nations, Mediterranean islands enjoy less autonomy: French Corsica has no special status (although some special policies are implemented there due to its insular position), neither have Greek islands. Cyprus and Malta, the only two sovereign islands in the Mediterranean islands have the most diversified economic structures with some sizeable industrial and banking sectors. However, when looking at the other dependent islands, there is no evidence that autonomy favors innovation: autonomous Sardinia, Balearic archipelago do not enjoy much more innovation than more dependent Corsica and Crete. This paper looks at the necessary factors for the implementation of successful innovation policies in insular territories as an answer to tourism dependency.

The challenge of innovation is shared by many islands around the world. Hainan, in China, has been trying to transform itself into a land of innovation, and so may be a possible example to follow for Mediterranean islands. This province had been neglected by the Central government until the early 80’s. At that time, Beijing decided to grant this island the status of Special Economic Zone, however, ill-prepared and poorly managed, this plan failed and Hainan was deeply affected by a financial crisis by 1996. But since the early 2000’s and the emergence of a middle class, tourism has

been booming through Hainan, and the island has become depend on tourism. Authorities have tried to curb this dependency by implementing innovative policies, however, the private sector may not be developed enough to sustain this innovation objective.

**2. Innovation policies in Hainan**

Hainan had been neglected for centuries by China. This tropical island in the South China’s sea had suffered from poverty and social tensions between non Chinese natives and “Han” colons. In the 80’s, the central government used Hainan as a “test-province” for implementing bold economic reforms. Hui Wang (1994) argues that the island was especially chosen for its remoteness, its small population and economic isolation. But the plan to transform Hainan as a second Taiwan did not succeed, because of a strong “laissez-faire” policy, the island was described as a “Wild West” province (Feng, 1998). Since the 2000’s, Chinese have been lured by Hainan’s tourism assets: sea, sun, local culture; per consequence, the island has become a popular Chinese destination; its economic structures, priory based on agriculture have changed to a more service-industry one. But little by little tourism has become Hainan’s leading sector, and the whole insular economy has become dependent to this industry. To solve this potential issue, the central and regional governments have launched several initiatives to diversify Hainan’s economy and transform the island into an innovative hub.

1) Map of Hainan



*2.1 Overview of innovation programs*

The innovation programs put in place by authorities have two objectives: the first one is to increase the tourism offer in Hainan by developing new tourism products, and the second one is to develop hi-tech industries in the island. Hainan attracts about 25 million Chinese tourists every year, but domestic visitors are more and more likely to travel abroad: last year, more than fifty million Chinese nationals went to a foreign destination. To face this challenge, like many other tropical islands, Hainan needs to diversify its tourism products and needs to offer new kinds of leisure. That is the reason why, in 2010, Beijing decided to transform Hainan in a truly international destination by 2020 thanks to the implementation of innovative policies, giving a unique character to Hainan. Two of these innovative policies are the opening of duty-free shops and the legalization of sport lotteries in island. These tourism products can be found in many foreign destinations, but, if we except Macau and Hong Kong, these policies are new in China. The creation of duty free shops has for main objective to transform Hainan into a shopping destination. But it also aims at developing tourism not only on the seaside but in the island’ cities and hinterland, so that most of the island’s regions get benefits from this innovation. The legalization of sport lotteries to diversify tourism has been experienced in other territories. For example,

in France, seaside resorts such as Deauville were given the authorization to open casinos in the early 1900's to boost tourism. The success of Macau's gambling development has incited other Asian destinations to legalize this industry. The case of Hainan is a bit different because authorities have adopted a progressive approach. There are still no casinos in Hainan, but sport lotteries. Gambling had been for long advocated by Hainanese local authorities, however, at that time, Beijing refused to authorize gaming for fear of corruption and criminal activities. But, the introduction of lotteries may be considered as a first move to the authorization of gambling in Hainan. Because of these restrictions, Hainan can still not compete with Macau as a gaming destination, but this has still increased the tourism products the island may offer to visitors.

The launching of innovative programs in Hainan is not restricted to the tourism industry; the industrial sector is also the target of these measures. Hainan shares one characteristic with Mediterranean islands, its industrial sector is very weak. No industry was ever established in the island. After WW2, Hainan was exclusively exploited for its rubber resources, which were then processed in other provinces of China. Because of high transportation costs and the lack of a large local market –with only 8 million inhabitants, Hainan is considered as a not very populated Chinese region-, few investors were interested in establishing factories in Hainan, the bad reputation and corruption of its officials were another rejection factor. Efforts have been pursued to process local resources such as rubber, tropical agricultural products, but also oil and gas. The government has also launched some programs to transform the island's agricultural sector. This one was historically inefficient, in spite of good climatic conditions, Hainan agricultural production had a lower quality than the ones of other provinces. But for the last ten years, the agricultural production has been completely reorganized, and has moved from traditional to innovative. This has been done by the introduction of new species and new industries (like orchids production) and by the use of computer technologies to supervise production. The island has also become an example to follow for its effort to rely on green energies. Despite large gas reserves<sup>1</sup>, in the past Hainan had suffered from energy shortage, to solve that issue, the local government has encouraged the development of solar energy. The growth of this energy resource will also preserve the island's environment and so will have a positive impact on the tourism industry.

## *2.2 Actors of innovation*

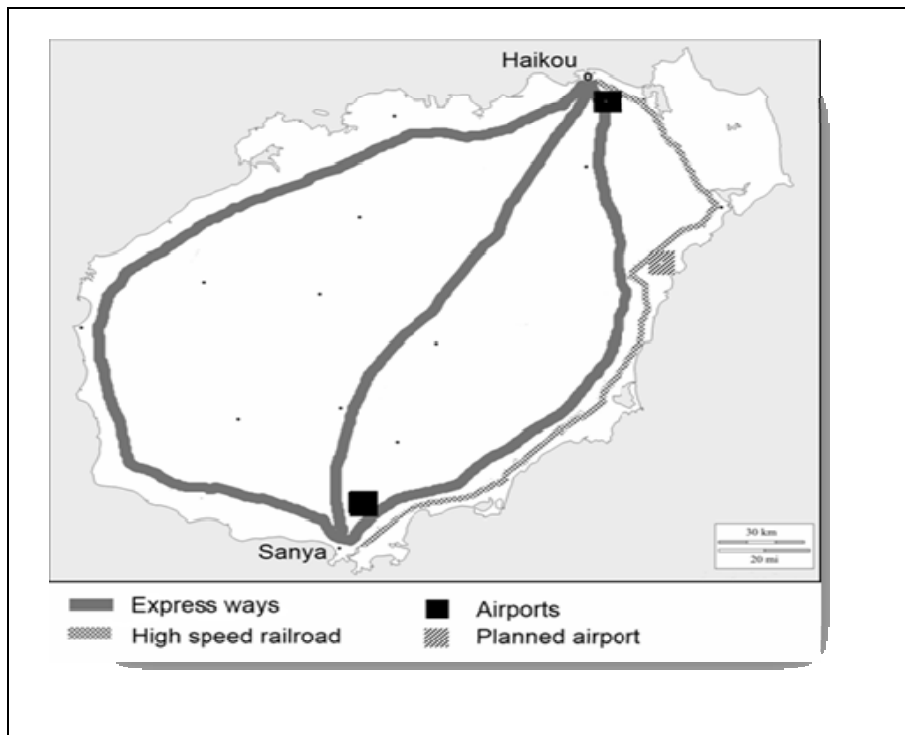
An OECD report published in 2011 highlights the role of regional governments in the implementation of innovation policy. This document insists on the need for a greater coordination between regions and central government. According to the authors, new innovation policies need to take into account the increasing globalization which give more opportunities to regions, and must respond to environmental challenges. The implementation of innovation policies should not only be the decision of the central or regional governments, but needs to be the result of mutual dialogue. In Hainan, both central and local governments have fulfilled their duties in establishing the bases for an innovative sector, but this may not be enough to develop innovation in the long run.

The central government has eased the launching of innovative industries in Hainan by creating the conditions, both legal and physical, to their development. Firstly, the central government has allowed the provincial authorities to give incentives to foreign investors: these ones can get tax break, and visa procedures have been facilitated for foreigners. On the other hand, the central government has heavily invested in the island infrastructures. The island, which was very secluded in the past and where journeys from one side to another could take at least half a day is now very open and well connected. Beijing has chosen to liberalize aviation regulations in Hainan: with the "open skies policy", Hainan has been much more attractive for foreign air carriers; the island will soon host three international airports that means that every region of the islands will be easily connected to Chinese and Asian cities. Furthermore, within the island, transportation has been made easier with the building of highways and high-speed railroads. These infrastructures not only help tourism development, but they are also used as a showcase for innovation technologies.

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<sup>1</sup> These ones were mainly used by other provinces.

2) Map of transportation infrastructures in Hainan in 2012



The local government is very active in the innovative sector through HNA, a province-owned company. This company was firstly established in the 90's as the island's main air carrier, but soon, it has expanded its activities to other tourism related sectors such as hotels, real estate, malls, car rental... This group is now the most powerful firm in the island and has multiple interests in every industry, including hi-tech companies. HNA promotes the development of drug related industries, and together with local governments try to attract leading companies in that sector. New innovation programs consist also in the opening of hi-tech industrial parks and the creation of a film studio in Haikou, the capital city. All these activities are rather not polluting and create high end products that do not need high transportation costs. To sustain these innovations, the province has also invested in education so that the local population may enter these industries.

The third type of actors of innovation in Hainan is the foreign investors. In 2009, FDI (foreign direct investments) reached about USD 170 million, FDI in Hainan are still lower than in other provinces, but Hainan is the smallest province and we can notice a huge evolution since the 90's. The recent innovation policies and the involvement of both central and local governments in the development strategy of Hainan have reassured foreign investors about the island's perspectives. The first foreign companies to invest in Hainan in the early 2000's were the international hospitality groups such as Accor or Starwood. Improvements in transportation have allowed the opening of hundreds of hotels, managed by Chinese and foreign groups. International companies have also invested to a lesser extent in hi-tech sectors and telecommunications. However, in spite of the presence of foreign companies, we can notice that a fourth necessary actor of innovation is still missing. Thus, the domestic private companies are still quite weak in Hainan. Local private-owned sector face many obstacles to emerge. Most of the programs supported by the local government consist in large scale projects. As a result, private companies feel excluded from these policies, they do not have the financial resources to take part to them. Another reason is that the province-owned companies may have too much power for the emergence of local entrepreneurs.

2.3 Innovation...work in progress

As noticed earlier, the local government is deeply involved in the innovative transformation of the island through its owned companies. If we can assume that these companies were necessary to launch the bases of local industries, they may now hinder the development of a private sector. Indeed, local entrepreneurs suffer from unfair competition vis-à-vis province owned companies. The latter ones have a better access to banking facilities, and get benefits from their good relations with local governments. On the contrary, private owned companies face hardships to get bank loans and to get

bigger. This situation may slow down innovation progress in Hainan: as noted by Acs and Audretsch (1988), small private companies are the most innovative ones, and that is the reason they need more support from local authorities.

Another obstacle to the emergence of a strong innovative sector in Hainan is the potential conflict of interests between the local government and the province-owned companies. The latter ones have their own agenda, and may not approve the strengthening of private competitors in the innovation technologies market. Province's interests may not match with province-owned companies' own objectives.

The development of innovation in Hainan is also challenged by a policy that favors short term interests. Although both the central and local governments have tried to implement innovation policies in Hainan, we can notice that they seem now to give priority to tourism again.

Since 2011, the State Council has raised the transformation of Hainan into an international destination as main objective for the next ten years. This strategy undermines the previous goal of making Hainan a land of innovation. The sector of tourism will still grow in China because of the increasing middle class' demand. However, there is a risk of overheating in Hainan. As we saw earlier, province owned companies have interests in several activities, including real estate. In Hainan, real estate is strongly connected with tourism, real estate development represents up to one third of the province's GDP. Although the provincial authorities are aware of speculative risks, they have been very reluctant to cool off the real estate market, because of the predominance of province owned companies in this sector. Giving priority to tourism is a way to make artificially grow the province's GDP. Developing innovative projects needs more time and more attention. This can only be reached on the long run; but officials may not be at their current position when obtained, and prefer quick results in order to get promoted.

### 3. Limits to the Hainan-Mediterranean Islands comparison

Is it fruitful to compare the situation in Hainan with the one in Mediterranean islands? We can draw some limits to the Hainan's model. But, in spite of their differences, they share some common features. Although Hainan is one of the smallest and least populated Chinese provinces with only 33,920 km<sup>2</sup>, it is still 4 times bigger than Crete, and with a population of 8.6 millions, it has eight times more inhabitants than the Balearic archipelago. One can note a difference of scale between these islands. However, if we compare these islands with their national country, we can note that both Mediterranean islands and Hainan are marginal. Per consequence, the development of these islands may not be considered as a key priority for their central government. These islands need to build up their development path on their specificity, and innovative industries may help them to do so.

**Table 1:** Comparison between Hainan and some Mediterranean islands on their weight in their respective national territory and population

Island	Island's population compared to national population	Island's area compared to national area
Hainan	0.64%	0,35%
Sardinia	2.75%	8%
Crete	5.5%	6.3%
Corsica	0.46%	1.3%
Balearic islands	2.3%	1%

**Sources:** Eurostat and NBSC

However, we can also notice that Hainan and Mediterranean islands do not enjoy the same national economic context. Whereas Chinese growth rate reached 9.5% in 2011, most European Mediterranean countries suffered from very low growth rate, some even got negative growth rate (Greece: -6%). Some may state that it is obvious that in that situation, Mediterranean islands may not benefit from large scale development projects, but we can argue that the creation of new infrastructures, the implementation of special incentives for investors may be part of an ambitious reflation policy. The crisis in Europe must be considered as an opportunity for Mediterranean island to change their economic model from tourism dependency to innovative industries.

Another limit to the Hainan-Mediterranean comparison would be the special structure of China's economy. China may be considered as a state in transition (Li, 2008). Its state-owned sector is still important compared to European countries. Nevertheless, we can notice that public sector is also quite powerful in Mediterranean islands with an important bureaucratic system (case of Sicily, Menighetti and Nicastro).

#### 4. Conclusion

After analyzing the case of Hainan, we can list several conditions for the success of innovative policies that can be used in the Mediterranean islands. The first one regards infrastructures. In the case of Hainan, the building of transportation infrastructures was the prime objective of the central government. Once created, the infrastructures worked as an investment facilitator, it was indeed possible for companies to choose Hainan as their industrial bases: high transportation costs were not a problem anymore. So, we can argue that central government's intervention is needed to launch large scale investment programs in infrastructures (Rondinelli, 1999). The role of local government is different, they can give the direction of the island's development path. In the case of Hainan, they have worked as the initiators of innovative industries by making their province-owned companies invested in these strategic sectors. They have also advocated to Beijing the implementation of special policies that would firstly attract foreign investors, and secondly better fit their small territory. These innovative policies have been successful in attracting large national and foreign companies. However, the local innovative industries are still fragile because of the absence of supportive policies. Local companies suffer from hard competitions with state-owned companies and the innovative policies are not directly designed for their development. As a result, Hainan has still not broken its tourism dependency. The Hainan example shows us that local government should not entirely rely on the public sector to implement innovative policies. Although state-owned companies are much more present in China than in European states, we can notice that, in the case of Mediterranean islands, both central and local governments have a very active part in the business sphere through semi-private companies and strong administrations. After looking at the case of Hainan, we can argue that the state should not be too present in the economy in order not to prevent the emergence of a private sector that can support the innovative process. The comparative approach adopted in this study shows us that the question of development in peripheral areas is still managed with difficulties by central and local authorities. In the case of Hainan, these ones have invested a lot in innovative industries, but this has not led to a strong innovative sector. In transitional China, the tasks of local governments are still not well defined. We may argue that Mediterranean islands face a similar issue with unclear local governments' tasks, and that governance is the key to their transformation from tourism dependent regions to innovative territories.

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