

## **THE EMERGENT AND GUIDED CO-EVOLUTIONS OF LOCATION ADVANTAGE \***

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## **THE EMERGENT AND GUIDED CO-EVOLUTIONS OF LOCATION ADVANTAGE**

We study here how location advantage is created and developed. We argue that the process of creation of a location advantage can be best understood as the result of the interaction between two distinct co-evolutionary processes, emergent and guided. We illustrate the application of the co-evolutionary perspective and the differences between emergent and guided co-evolutions with the analysis of the development of location advantage in the Costa Rican tourism industry.

Keywords: location advantage, resources, coevolution.

Firms often benefit from their presence in locales. The access to external resources that comes when operating in the “right” place helps companies develop their own resources, consolidate their competitive positions, and even become MNEs (Dunning, 1977; Foss & Eriksen, 1995; Porter, 1990). These resources are as diverse as natural resources (Dunning, 1993), highly skilled personnel (Saxenian, 1994), external capital (La Porta et al., 1997), technology (Cantwell, 1989; Nelson, 1993), or sophisticated clients (Vernon, 1966), among many others. The additional benefit(s) that firms in a particular location have in relationship to firms in other locations constitutes the essence of location advantage. In essence, location advantage arises from privileged access to external resources.

Since, among the determinants of international production and MNEs, location advantage has received the least attention in management studies, we have a less clear understanding of the process by which it is created (Dunning, 1998). Yet, understanding such process remains of importance. Managers need to distinguish between the firm’s ownership and location advantages, including the processes that lead to each (Itaki, 1991), while government officials need to understand processes that lead to the development of location advantage if they are to support domestic firms’ competitiveness and attract foreign direct investment (FDI) (Dunning, 1993; Porter, 1990).

In this paper, we study *how* location advantage is created<sup>1</sup>. To contribute to the academic conversation, our study specifically addresses the *process* of development of the location advantage rather than its determinants as done in other studies (Porter, 1990). In so doing, we create links between extant research on location advantage from international management,

strategic management, and economic geography studies with research on processes from organization studies, to provide a parsimonious but integrative framework.

Location advantage is a country-level phenomenon<sup>2</sup>. However, it is composed of elements that interact interdependently on distinct levels (i.e., country, industries, and firms). Accordingly, we view the location advantage as a multi-level system of nested hierarchies (Van de Ven & Grazman, 1999), and we model its creation by using a co-evolutionary lens (Baum & Singh, 1994; Levinthal & Myatt, 1994; Lewin & Volberda, 1999), where the different levels of analysis undergo a simultaneous evolution as actions in one level of analysis influence the actions in another. Specifically, we argue that the process of creation of a location advantage can be best understood as the result of the interaction between two distinct co-evolutionary processes: Emergent processes where the actions of social actors (firms in our case) are not directed towards the creation of country-level location advantage but towards their own benefit, contributing unintentionally to the creation of location advantage; and guided processes where the intentions of social actors (in this study the government) are specifically directly at contributing to the development of country-level location advantage. This co-evolutionary perspective provides a useful way to integrate micro- and macro-level evolution within a unifying framework, incorporating multiple levels of analysis into one integrative framework while leaving room for contingent, emergent effects (Lewin & Volberda, 1999, pp. 520).

In the next section we present the research framework and define the concepts used. Then, we analyze how it helps theorize the process of creation of location advantage through a co-evolutionary perspective, integrating different theoretical approaches. We illustrate the application of this view by studying the development of the location advantage in the tourism industry in Costa Rica. Finally, we conclude with the implications of the study.

## THE EMERGENT AND GUIDED CO-EVOLUTION OF LOCATION ADVANTAGE

We believe that the application of a co-evolutionary approach to the analysis of the process of creation of location advantage can yield stimulating insights. We argue here that this process can be understood as the interaction of two co-evolutionary processes, one emergent where agglomeration dynamics of firms and industry lead to the creation of location advantage through the co-evolution of competitive and factor markets, and a guided one, where infrastructure dynamics of government and firms influence the process of creation of location advantage through the co-evolution of institutions and endowments. Furthermore, both processes co-evolve to generate the location advantage. Figure 1 illustrates this framework. In this paper we will highlight the processes rather than the factors that contribute to the location advantage.

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Figure 1 about here  
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### *Location Advantage*

Location advantage is the additional benefit that firms in a particular geographical space have in relationship to firms in other geographical spaces. Firms benefit from a location advantage because they have access to location resources that firms in other locations do not have. Following the notion of firm resources (Wernerfelt, 1984), we conceptualize location resources as the tangible and intangible assets tied semi-permanently to a location. Among them one finds educated labor (Saxenian, 1994), technological infrastructure (Nelson, 1993), developed capital markets (Booth et al., 2001; La Porta et al., 1997), or a network of competitive firms (Gulati, Nohria, & Zaheer, 2000), among others. These resources, available to the firm but external to it, support the development of the resources of the firm (Foss & Eriksen, 1995), its

innovativeness (Nelson, 1993) and competitiveness (Porter, 1990; Saxenian, 1994), which can even push the firm to internationalize (Vernon, 1966).

Although location has received less attention than other sources of advantage (Dunning, 1998), there is a growing if disperse literature that identifies some of the factors that support it. First, international management scholars have indicated the relevance of the location advantage for the behavior of the firm and for its results (Dunning, 1977; Hymer, 1976). This literature has centered its attention mainly on two areas: how the existing location advantage of the home country supports the internationalization of the company (Vernon, 1966), and how the existing location advantage of the host country leads to FDI (Dunning, 1977), identifying several factors that contribute to it, such as natural resources (Dunning, 1993), technology (Cantwell, 1989), or sophisticated clients (Vernon, 1966).

Second, political economy scholars have analyzed in detail the characteristics and factors that enabled certain areas to develop a constellation of highly competitive firms (Amsdem, 1989; Piore & Sabel, 1984; Saxenian, 1994), identifying the role of government and the interactions among firms in facilitating the development of competitive advantage. Following this tradition, other studies identified the factors that contribute to competitiveness of locations and the emergence of clusters, such as factor markets, product markets, supporting industries, and demand conditions (Enright, 1998; Porter, 1990).

Third, research in economic geography indicates the importance of agglomeration of economic activity in general and the importance of increasing returns, transportation costs, and movement of productive factors to explain the agglomeration of economic activity at urban, regional, and international levels (Fujita et al., 1999). Agglomeration facilitates the

interdependence and specialization in production, resulting in positive externalities (Chung & Kalnins, 2001).

Finally, research on evolutionary economics and systems of innovation has identified the different elements (economic, institutional, and human resource infrastructures) of a country that help in the innovation process (Nelson, 1993). Additionally, it shows the usefulness of evolutionary notions to explain the creation of systems of knowledge that supports innovation in firms.

### *Co-Evolution*

Co-evolution has been gaining relevance among researchers interested in finding new ways of analyzing the transformation of multi-level entities (Lewin & Volberda, 1999). Co-evolution is generally understood as the simultaneous evolution of organizations and their environments (Baum & Singh, 1994), and as the “joint outcome of managerial intentionality, environment, and institutional effects” (Lewin & Volberda, 1999, pp. 526). It is characterized by multilevelness/embeddedness, multidirectional causalities, non-linearities, positive feedback loops, and path and history dependence (Lewin & Volberda, 1999, pp. 532).

We propose two types of co-evolutionary processes that can be useful for understanding the development of location advantage: Emergent processes that evolve into a pattern without intention (Mintzberg & Waters, 1985), and guided processes that involve the selection of objectives and the application of a series of means to obtain them (Lovas & Ghoshal, 2000). In the former, changes in one level lead to changes in another level with no a priori intention on the part of the social actors in one level to develop the other. These emergent co-evolutionary processes originate in the nested nature of the phenomena. For example, new firms entering independently and in an un-coordinated manner in an industry do so motivated by their own

objectives, but their entry alter industry dynamics in unintended ways (Baum & Singh, 1994). Similarly, changes in the capabilities of firms can lead to more competitive industries (Levinthal & Myatt, 1994). Although social actors may have clear intentions, we term these co-evolutionary processes emergent because their intentions are not directed at transforming other levels of analysis; changes in other levels nevertheless emerge as their by-product.

The guided processes of co-evolution work in a different manner. Here, the intentions of some social actors foster changes that influence other levels of analysis. In these processes, actions are guided towards the attainment of desired outcomes, via evolutionary changes (Lovas & Ghoshal, 2000). While it is clear that the achievement of outcomes is not assured, the intentions are clear and precede the decisions and actions that are taken. For example, innovators may aim to alter the dominant technology and the characteristics of industry in which they compete (Rosenkopf & Tushman, 1994), or legislators may try to induce the transformation of the industry and firms in it (Van de Ven & Grazman, 1999). We term these co-evolutionary processes guided because there is intention on the part of the social actors in one level to direct the transformation of another level.

### *Co-Evolution and Location Advantage*

We apply the two forms of co-evolution, emergent and guided, to the analysis of the development of location advantage to illustrate the multi-level process of transformation, arguing that the two processes apply to changes in different determinants of location advantage, and that their joint interaction is necessary for the achievement of the location advantage.

**Emergent co-evolution of location advantage.** The emergent co-evolution process leads to the development of the location advantage through the processes of agglomeration and the related influences of competitive and factor markets (see Figure 1). The key ideas are the



following: First, agglomeration dynamics reflect an emergent co-evolution process, as the actions of firms are not focused towards promoting the agglomeration, but they nevertheless contribute to it; second, agglomeration dynamics lead to the development of location resources through the dual forces of product and factor markets; third, the location resources can provide a location advantage that supports the competitiveness of firms.

Agglomeration economies (Fujita, Krugman, & Venables, 1999) appear as firms choose to concentrate in a geographical space, creating concentration of related economic activity, which unintentionally facilitates the development of a location advantage. As neighboring firms agglomerate, they induce the specialization of activities, as markets thicken and additional potential buyers appear or become aware of the existence of the location. This, in turn, induces the establishment of other firms that support existing companies, increasing the density of the agglomeration and augmenting competition, further leading to the search for specialization of firms on areas where they are more competitive. Thus, further agglomeration leads to the creation of highly specialized and competitive firms, while the increase in specialization and competitiveness of firms leads to further agglomeration. The increase in the concentration of economic activity not only augments the scale of activity but also changes its nature. In this way, the actions of firms at the lower level of analysis and the changes in the industrial agglomeration at the higher level of analysis evolve simultaneously or co-evolve, reinforcing each other's transformation. Thus, the agglomeration dynamics lead to an emergent co-evolution, where both firms and the industry change, but with no directed intention on the part of firms to create a location advantage.

The emergence of the agglomeration dynamics leads to the creation of location resources through the dual influence on the product and factor markets. Regarding the product markets,

agglomeration promotes the development of more competitive firms as competitive pressures increase with the increase in density of competitors (Chung & Kalnins, 2001; Porter, 1990). The proximity of firms in a geographical location facilitates the imitation of strategies, as there are spillover effects influencing the location of new entrants and increasing competitive pressures (Shaver & Flyer, 2000). Agglomeration not only facilitates competition but also cooperation among competitors and the establishment of interdependencies, which increase competitiveness and enable firms to tailor products to the needs of proximate clients (Piore & Sabel, 1984). Hence, the growth of product markets leads to locales with highly competitive firms supporting each other and serving increasingly demanding clients, providing location resources to the firms in the agglomeration in the form of knowledge spillovers, competitive pressures, cooperation, and customer knowledge.

Regarding factor markets, agglomeration dynamics facilitate the specialization of firms in clusters of interrelated companies (Enright, 1998). As agglomeration density increases and there are more competitors operating, it is possible to divide the value chain and specialize in areas where each firm achieves higher levels of competitiveness, thus contributing to the competitiveness of the next stage of the value chain (Stigler, 1951). Furthermore, there is an increase in the supporting industries, as the number of firms that can be carried by the locale increases (Porter, 1990). Also, spillover effects facilitate not only the competitive pressures, but also the cooperation among interrelated firms and the transfer and exchange of complementary knowledge across industries (Audretsch & Feldman, 1996). In this manner, a group of firms located in proximity becomes a network of interdependent firms, where the firm benefits from the access to other firms in the network in comparison to firms not in it (Gulati, Nohria, & Zaheer, 2000). Hence, the growth of factor markets facilitates the specialization of firms and the

development of location resources in the form of highly competitive inputs for the firms in the agglomeration.

Nevertheless, agglomeration does not always lead to the creation of location resources. It is the co-evolution between competitive and factor markets that supports the agglomeration dynamics that give rise to location resources and location advantage. For example, the agglomeration of economic activity and labor concentration in US inner cities has not resulted in the development of a location advantage for firms operating in such areas, and in some cases it has resulted in a location disadvantage (Porter, 1997).

Extending the analysis of the determinants of sustainable competitive advantage in the resource-based theory (Barney, 1991) to the level of location, location resources are likely to support a sustainable location advantage for three reasons. First, because the emergent co-evolution leads to multidirectional causalities and non-linear interrelationships that are path- and history-dependent, it increases inimitability by creating causal ambiguity (Lippman & Rumelt, 1982) and time compression diseconomies (Dierickx & Cool, 1989). Second, because knowledge spillovers and collaboration tend to require face-to-face contact to facilitate the transmission and development of tacit knowledge (Nonaka & Takeuchi, 1995), it reduces the possibility of substituting one location by another one, thus making it inimitable. Third, because firms tend to develop resources that enable them to operate in a well-defined institutional environment but not in others (Oliver, 1997), it limits the transferability of location-specific knowledge and resources.

Hence, we propose that:

*Proposition 1. Locations with agglomeration dynamics inducing the co-evolution of product and factor markets are more likely to lead to the development of location advantages.*

**Guided co-evolution of location advantage.** Guided co-evolution leads to the development of location advantages via the processes of infrastructure development and the related co-evolution of institutions and endowments. Three core ideas sustain the argument. First, infrastructures are created in a process of guided co-evolution, as they reflect a purpose of one or several social actors to develop the infrastructure. Second, infrastructure dynamics lead to the creation of location specific resources through the development of institutions and the refining of existing endowments. Third, location resources can generate a location advantage that supports the competitiveness of firms, though it is less sustainable than the previous case.

In contrast to the emergent co-evolution, infrastructure dynamics appears from a process of guided co-evolution where social actors take measures to influence the process of development of a location advantage. This process is subject to the influence of groups of identifiable actors whose intentions shape the results of that process. Among them, one can find the government via its ability to develop institutions (Murtha & Lenway, 1994), and develop and refine the location endowment (Stopford & Strange, 1992). In all of these cases, infrastructures and endowments are built and developed following a guided co-evolutionary process, where social actors at a lower level purposefully aim to influence the process of transformation of the location infrastructure and endowments at the higher level to contribute to the location advantage.

The infrastructure dynamics facilitate the development of location resources via the creation of institutions and the use of endowments. The creation of institutions, or “humanly devised constraints that shape human interaction” (North, 1990, pp. 3), shape the quality and quantity of acceptable behaviors and reduce the uncertainty of participants who can better predict the guidelines under which interactions will take place. These rules of behavior are largely

influenced by the actions of the government, when it regulates activities (Stigler, 1971) or modifies its relationship with firms (Stopford & Strange, 1992). These institutions support the development of location resources such as capital markets (La Porta et al., 1997), technology and innovation (Nelson, 1993), or entrepreneurship (Van de Ven, 1993).

The development of endowments facilitates the development of location resources. Initial endowments of the region or country (labor, land, and capital) that support its comparative advantage provide location resources that firms can immediately use, but that are relatively abundant and not particularly sophisticated. Often, firms take advantage of the relative abundance of a factor in a country (Rodriguez & Sachs, 1999), even if it is not unique or rare. Nevertheless, the inherited endowment can be transformed, providing firms with more developed endowments that have the potential of becoming a location resource from which firms can obtain larger benefits (Ferranti, Perry, Lederman, & Maloney, 2002). For example, whereas firms can benefit from the access to large pools of labor, they can obtain a higher advantage from the access to highly skilled labor in a location (Saxenian, 1994), and pressure the government to invest in policy programs to develop the skills of labor. Additionally, the population can act both as a source of labor and as a demand for the products, not only in terms of the number of potential consumers, but also in terms of their sophistication (Porter, 1990).

Infrastructure dynamics do not always lead to the development of endowment or institutions. It is infrastructure dynamics targeted at the development rather than exploitation of institutions and endowments that support the creation of a location advantage. For example, the efforts of the Russian government to develop the necessary institutions to create a market economy were largely unsuccessful, partly because the government chose to undertake partial reforms rather than radical ones (Murphy, Shleifer, Vishny, 1992), which led to the expansion of

corruption and a system of development that was extractive in nature. In a similar fashion, the focus on the exploitation of the endowment in an extractive rather than a harvesting way can lead to the destruction of the endowment that supports the location advantage. For example, the cod banks of the North Atlantic that generated a whole economic pole were overfished, leading to the collapse of the cod population and the disappearance of the location advantage (Kurlansky, 1997).

For a guided co-evolution process to lead to the creation of a sustainable location advantage, the location resources have to be valuable to firms, rare in relationship to other locations, and difficult to imitate (Barney, 1991). However, unlike the emergent co-evolution, in the case of guided co-evolutions, this location advantage can be identifiable as it is the result of purposeful actions from large social actors, which reduces its sustainability. For example, it is easier to copy the actions of the government that enabled the development of the location advantage, such as when the South Korean government imitated the actions of the Japanese government in supporting firms (Amsdem, 1989). Nevertheless, the path and history dependency of the actions might limit the direct imitation of the practices and location resources. Additionally, the institutions and endowments vary across countries, protecting the sustainability of the location advantage.

In summary, we propose that:

*Proposition 2. Locations with infrastructure dynamics inducing the co-evolution of institutions and endowments are more likely to lead to the development of location advantages.*

**Interactions between emergent and guided co-evolutionary processes.** Emergent and guided co-evolution processes are necessary but, in general, not sufficient on their own for the development of the location advantage. Their interaction leads to higher degrees (i.e. better

quality and more quantity) of location advantages. On the one hand, emergent co-evolution processes require institutions and endowments that firms can use for the development of resources that foster competitive agglomerations. For example, the agglomeration of economic activity, labor force, and consumers in US inner cities has not resulted in a location advantage because of the lack of the development of sophisticated communications infrastructure and educated workforce with the right attitudes towards work (Porter, 1997). On the other hand, guided co-evolution processes require firms that agglomerate and interact to generate appropriable external resources. For example, the large investment in Malaysia in the development of infrastructure for the Multimedia Super Corridor has not resulted in the generation of a location advantage similar to that of Silicon Valley because of the lack of establishment and creation of firms that generate the agglomeration dynamics (Clifford, 1997; Einhorn & Prasso, 1999).

Thus, it is the interaction between the two co-evolutionary processes, rather than any of the processes in isolation, that creates the often mentioned –but ill-understood– “virtuous circle” that contributes to reinforce the development of location resources and the creation of a location advantage. Thus, location advantage is neither a top-down process where governments influence the infrastructure dynamics and wait for the agglomeration dynamics to occur, nor a purely bottom-up process where firms in search of their own benefit generate the agglomeration dynamics and hope for the infrastructure dynamics to appear. It is the co-evolution of the emergent and guided co-evolutionary processes over time what enables the development of the location advantage. Thus, the creation of a location advantage, such as that of Silicon Valley, through purely governmental fiat or through purely managerial effort is unlikely to succeed. Managers and government officials need to interact to generate the advantage, understanding that

the role of managers is not the development of the location advantage, nor the role of government officials is to provide support targeted only at existing firms. Understanding the process is as important as the understanding the factors that support location advantage, for factors alone will not achieve location advantage.

Our co-evolutionary argument indicates that the timing of the actions of government and firms is not one of a sequence, but one of simultaneity, where firm and government actions interact and change over time. Thus, the investment in the infrastructure dynamics to support the location advantage has to be flexible and unstructured enough as to change with the transformation of the agglomeration dynamics, while the agglomeration dynamics will be adapted and transformed as the infrastructure supports new transformations.

From these discussions we propose that:

*Proposition 3. Locations with both emergent agglomeration and guided infrastructure dynamics inducing the development of location resources are more likely to lead to the development of a location advantage.*

### ILLUSTRATION

We illustrate the application of the framework by studying the creation of the Costa Rican tourism industry. The analysis of the process of development of Costa Rica as one of the world's premier locations for eco-tourism reveals the usefulness of applying co-evolutionary thinking for the analysis of complex, multi-level, non-linear interactions that are at the root of the development of the location advantage. The emergent co-evolutionary process is reflected in the development of the industry through the interactions between demand and supply. The guided co-evolutionary process is reflected in the development of the natural resources and the



institutions that supported the tourism industry. These processes and their co-evolution enabled the development of the location advantage.

### *Research Design*

We chose tourism in Costa Rica because it provides a quasi-natural experiment of industry creation, with well-defined geographical and temporal boundaries. Tourism is the world's largest industry, generating 10.9% of world GDP (\$3.4 trillion) in 1995 and contributing 11.4% of the world's capital investment (Brandon, 1996). Costa Rica is a country with a long democratic tradition and solid institutions (Rottenberg, 1993), which, in less than two decades (1980-1999), has moved from dependency on agriculture (coffee and bananas) as the main export to becoming a tourist destination and a center for sophisticated manufacturing and services (Lizano, 1999; Spar, 1998). The country's dominant segment, eco-tourism, or the travel to natural areas to understand the culture and natural history of the environment; taking care not to alter the integrity of the ecosystem; producing economic opportunities that make the conservation of natural resources beneficial to local people (Ecotourism Society, 1991, in Brandon, 1996), had not developed as such before the 1980s, making of Costa Rica one of the pioneering countries in its development.

Data were obtained through primary and secondary sources to achieve triangulation (Yin, 1994). Semi-structured interviews with industry specialists (4), government officials (3), and managers (14) of hotels and travel agencies facilitated the understanding of the evolution of dimensions and relationships among them; they were conducted between March and December 2000 and lasted between one and three hours. Secondary data, obtained from Costa Rica's government, the Latin American Center for Competitiveness and Sustainable Development (CLACDS), and existing literature, were analyzed before the interviews.

As suggested by Van de Ven and Poole (1990) and Yin (1994), the case study was done through the mapping of multidimensional key events. We tracked the transformation of relevant dimensions in tables that summarized the annual events occurring in each one. Although the start of the boom in tourism in Costa Rica is commonly pointed at the year 1987, we chose 1980 as the departure point to be able to understand the antecedents and initial conditions.

### *Eco-tourism: Creation of an Industry*

In spite of its recent success as an ecologically friendly, fashionable destination, in 1980 Costa Rica was not a viable alternative for international tourism (Sanchez, Barahona, & Artavia, 1996). By the late 1990s, however, it had emerged as a key destination for “green” tourism and had a well-developed infrastructure of international-level quality hotels and services catering mainly to wealthy –and demanding– tourists.

**Emergent co-evolution.** In the 1970s the hotel infrastructure in Costa Rica was primarily geared towards domestic demand, with hotels in the city for business travelers, hotels in beaches for domestic tourists, and little else. The majority of visitors came from other Central American countries and were generally people in search of work or escaping violence. The early 1980s witnessed the increase in visitors from Nicaragua as its civil war intensified. The truce organized in 1986 under the Costa Rican President Oscar Arias (who was later awarded a Nobel Prize for it) consolidated the country’s image of an oasis of peace and relative prosperity.

As demand started to pick up, initially mainly from Canada and Europe, small hotels offering nature and owned by long-term foreign residents of Costa Rica developed, who were able to understand the needs of foreigners and the characteristics of operating in Costa Rica. The creation of new hotels and the increase in more sophisticated and demanding clients coming from Canada and Europe induced the creation of more hotels and the upgrade of the existing

hotels (Figure 2). This resulted the development of an emergent country-level location advantage, where hotels that were looking for their own benefit by doing so led to creation of more sophisticated industry through the co-evolution of agglomeration dynamics in product and factor markets. As the hotel infrastructure developed, US tourists started pouring in (Figure 3), leading to the development of a larger product/service offering, including not only the traditional small eco-tourism hotels, but also larger ones specializing in different segments (i.e., soft-adventure, whitewater rafting, bird watching, natural beaches...). Additionally, other actors such as travel agencies appeared and specialized. Although these were initially developed to serve the local market as retail agencies, when opportunities appeared there was a surge of agencies serving incoming visitors, connecting with tour operators to coordinate visits (Figure 4). Additionally, travel agencies specialized further towards eco-tourism, broadcasting their services through the tour operators and helping consolidate the image of the country as an eco-tourism destination. Thus, the agglomeration dynamics led to the co-evolution of demand and supply; the competitive and factor markets developed, enabling the specialization and upgrading of firms and industry.

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Figures 2, 3 and 4 about here  
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Meanwhile, the development of the eco-tourism image of the tourism industry in Costa Rica attracted the attention of large hotel MNEs. As these firms entered, they increased the quality of the offer by creating luxury hotels (Figure 4), which led to further specialization and improvement in services to them and to their clients. MNEs established their own links to tour operators to attract more visitors and, simultaneously, the tour operators started booking stops of cruises in Costa Rica, leading to further demands on services for visitors. In the process,

additional industries, that were insignificant until then (such as handicrafts), emerged, to serve the needs of visitors, later contributing to the attractiveness of the location.

In summary, the agglomeration dynamics led to the creation of the location advantage of the industry following an emergent co-evolutionary process. Demand and supply reinforced each other, and as demand increased, supply specialized, which led to further demand. The creation and growth of the industry was emergent, where firms acted on their own interest rather than to create a location advantage. The eco-friendly image of the country and industry was developed mainly by foreigners operating small hotels, who understood and were able to match the country resources of Costa Rica with the expectations of foreign visitors from wealthy countries. Although these firms were operating at a small scale and could not create the image of a whole country, their actions are understood as the first steps that initiated a process. The lack of infrastructure for mass tourism facilitated the development of the high-quality resource that was used only by these small firms. Later, this location resource leaked to latecomers, such as MNEs, which also provided high-level resources in terms of management and operations, and valuable links to the international industry. The agglomeration led to the creation of complementary location resources, such as the handicraft industry, while the accumulation of firms facilitated the diversification of the offer, with firms further specializing and offering more competitive inputs to other firms.

**Guided co-evolution.** The guided co-evolution was promoted by the actions of the government to develop the tourism industry as an alternative source of economic development. This took the form of the development of the endowment via the protection of nature and the provision of the institutions that supported the industry with the explicit objective of generating a location advantage. The initial involvement of the government in the protection of nature was not

done for tourism purposes, not even for the sake of ecology, but to protect the sources of water for the hydroelectric generation and to establish reserves for wood (Meza & Bonilla, 1990). Indeed, serious protection of nature in Costa Rica started in the 1980s after three decades of having one of the highest deforestation rates in the world (Meza & Bonilla, 1990). This important deforestation rate was the unintended consequence of a government decision, which provided incentives for the clearing of forests for agriculture and for cattle grazing (Figure 5).

Starting around the late 1960s, pressures from groups developed by foreign and local tropical biologists and other ecologists led to the establishment of some protected areas, while deforestation continued. However, as the tourism industry started to develop in the late 1980s, it caught the attention of the government as a potential source of economic development, leading to a series of measures to promote the protection of the remaining natural endowment, with the transfer of the administration of national parks outside of the Ministry of Agriculture in 1990 or the centralization of protected areas in 1992.

These measures helped the development of the endowment of the country as an ecological destination, benefiting from the transformation of existing infrastructure towards the industry. At the same time, the government established the institutions that facilitated the development of the industry such as the creation of regulation of the classification of hotels in 1987 and the Tourism Institute to coordinate tourism policies. Additionally, in the 1990s the government actively promoted the image of Costa Rica as an attractive destination with advertisement campaigns in the main markets that benefited all firms and increased demand. The process of development was uneven, as when the large increase in the admission fee to national parks for foreigners in 1993 led to a sharp drop in foreign visitors, which forced the later reduction of the fee (Figure 6). Moreover, the fiscal incentives to the industry were not always

coherent, promoting the creation of firms whose position was less eco-friendly as the country's image; the development of large beach resorts commenced to clash with the image of ecology and conservation, and some hotels ended up being challenged in court. Simultaneously, there was a campaign of environmental certification of hotels to reduce abuses and reinforce the policies of the government for protection and conservation. The intervention was steeped up as the industry resources showed signs of overexploitation, investing in their recovery and development.

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Figures 5 and 6 about here  
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In summary, the infrastructure dynamics facilitated the development of the location advantage through a guided co-evolutionary process. Government actions facilitated the establishment of the institutions that supported the development of the supply and demand, while at the same time it transformed the use of natural areas, shaping it towards the needs of the tourism industry. It promoted the eco-friendly image initially developed by operators of small hotels for their own use, correcting mistakes in the promotion of the destruction of nature and weakening institutions that were counterproductive to the location advantage in eco-tourism.

**Interactions between emergent and guided co-evolution.** Although the process was not smooth, the interactions between the two co-evolutionary processes enabled the establishment of a virtuous circle that enabled Costa Rica to become a major eco-tourism destination. The emergent co-evolutionary process of the agglomeration dynamics established the “green” image and location advantage for the creation of the industry, but it needed the guided co-evolutionary process of infrastructure dynamics, especially in the preservation of nature that supported the reputation of the industry. The agglomeration dynamics were reinforced thanks to the actions of

the government in the development, organization, and protection of natural areas, in the promotion of the image of the country abroad, and to a lesser extent on the provision of tax incentives to facilitate the development of tourism-related firms. Nevertheless, the infrastructure dynamics were not the only guide for the creation of the location resources. The interactions between increasingly sophisticated demand and increasingly specialized and sophisticated supply of hotels, travel agencies, and supporting services reinforced each other and led to the creation of the industry. Governmental support helped consolidate the location resources. In this manner, emergent and guided co-evolutionary processes reinforced each other in the development of the location advantage as they co-evolved.

## CONCLUSIONS

The paper contributes to the on-going conversations about firm resources and location (Dunning, 1977; Foss & Eriksen, 1995; Oliver, 1997) and, more generally, to the understanding of the relation between firms, industries and countries (Dunning, 1998; Porter, 1990). It integrates previous literature in international management, economic geography, and strategic management that identify factors that contribute to the development of location advantage, with analyses in organization studies that discuss processes of development. The linkage of notions of location advantage with the ideas of co-evolution allowed us to develop a parsimonious framework that can be used to understand the development of location advantages through the interactions of many actors, residing in many levels, and having multiple and often contradictory intentions, thus providing new insights into understanding this complex process. Such analysis clarifies the processes of development of the location advantage, complementing studies that identified the factors that support such advantage (Amsdem, 1989; Fujita et al., 1999; Piore and Sabel, 1984; Porter, 1990; Saxenian, 1994), and contributing to extend our knowledge in this

understudied area (Dunning, 1998) by highlighting the importance of the process of development in addition to the factors that support location advantage.



## NOTES

<sup>1</sup> Location advantage can take multiple dimensions. For simplicity, we use the singular to refer to it.

<sup>2</sup> Location as a spatial concept is often ill defined. We use “location” and “country” as synonyms for simplicity of exposition, and for coherence with the illustration of the application of the framework. In large countries the analysis of location advantage can also be undertaken at the regional level. The framework presented can easily be adapted to discuss this.

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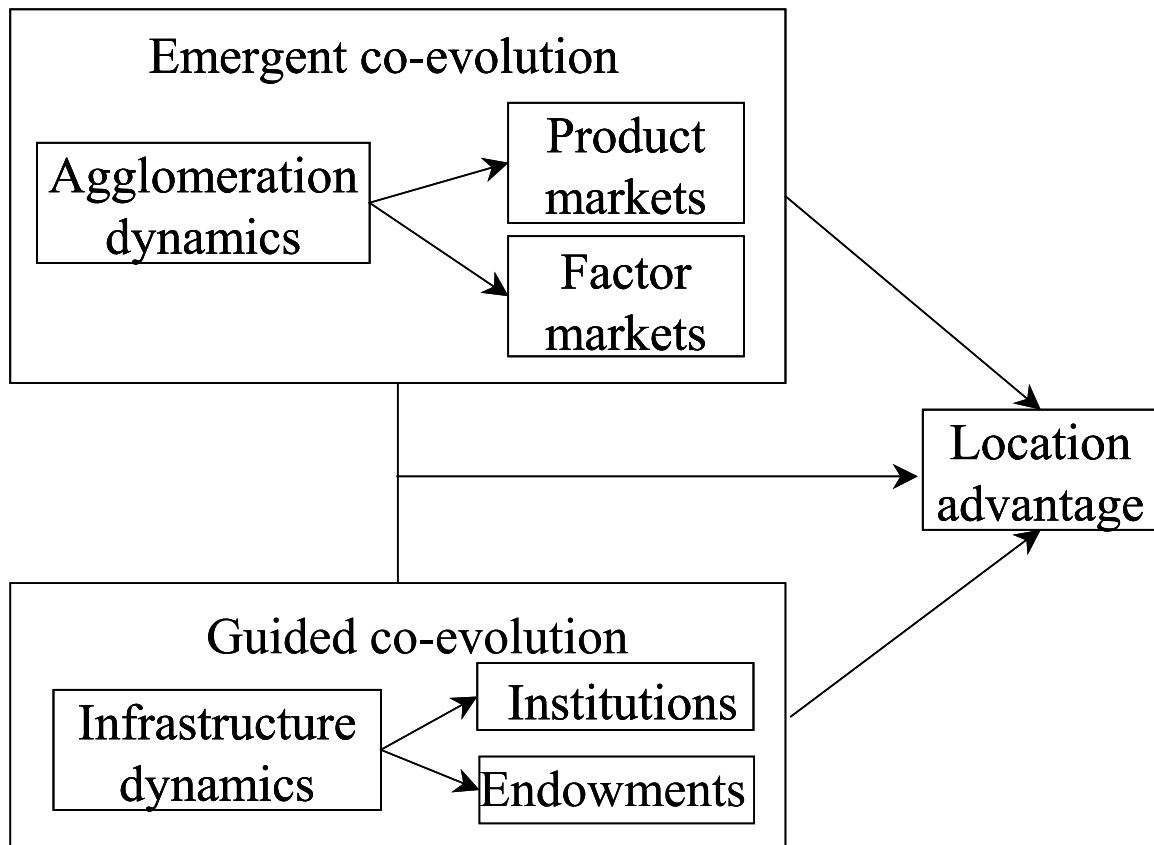
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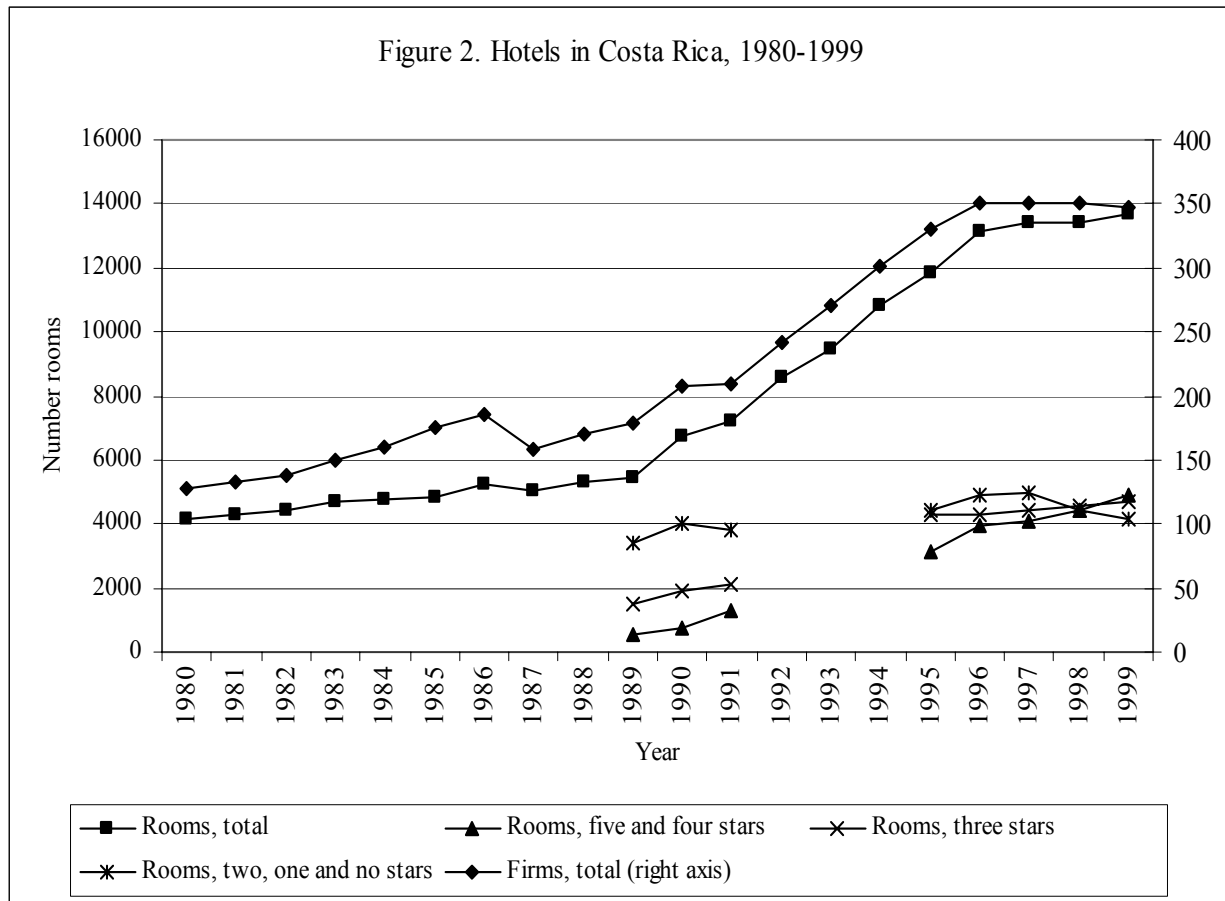
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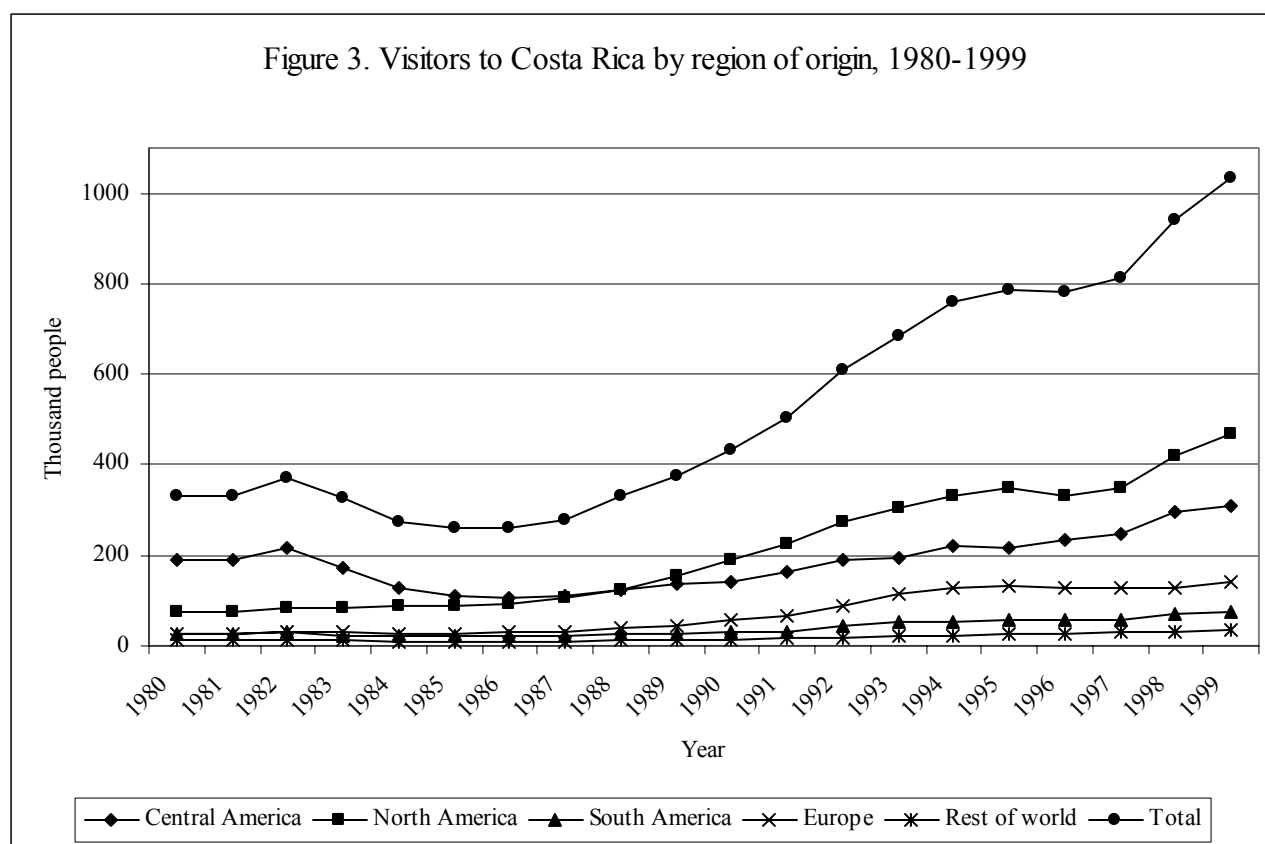
Figure 1. Research framework: Co-evolutionary processes of creation of location advantage.



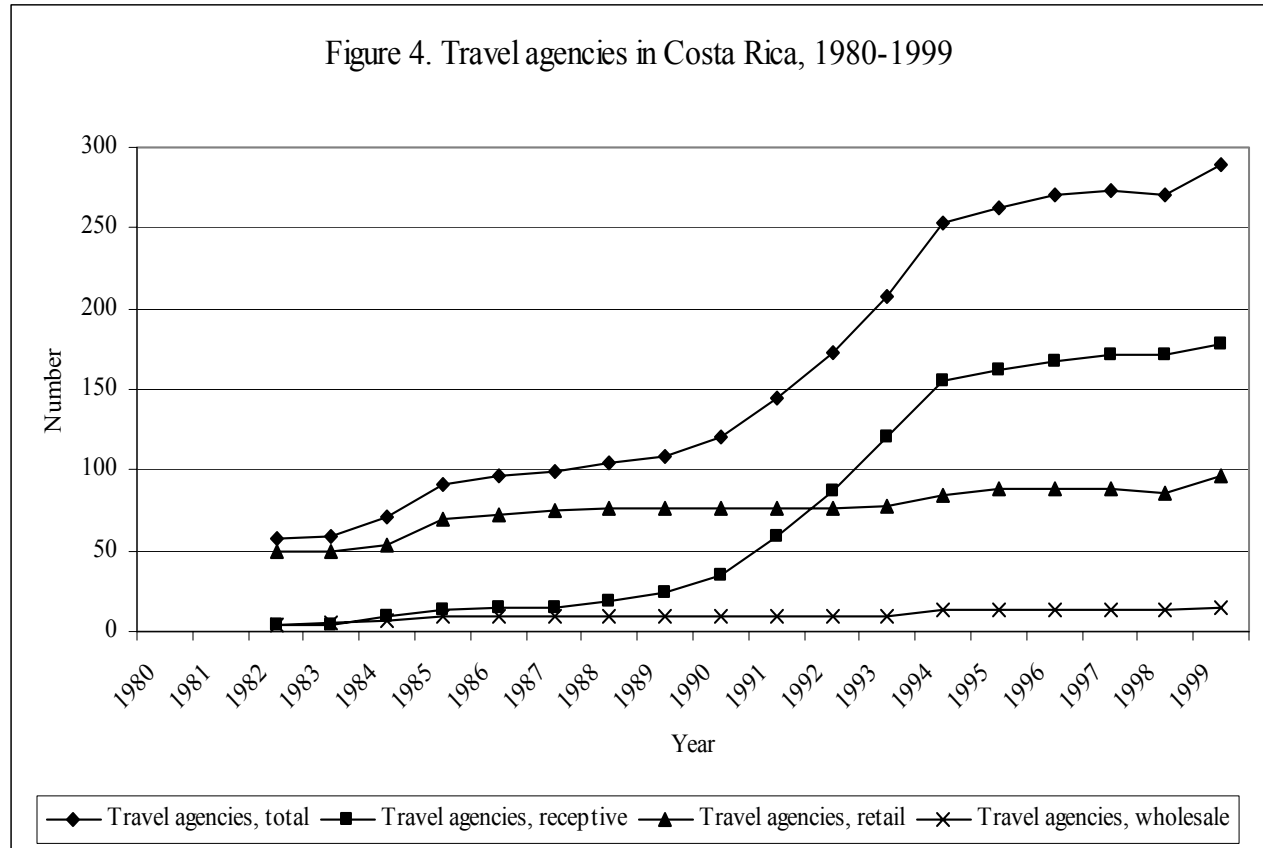




Source: ICT.

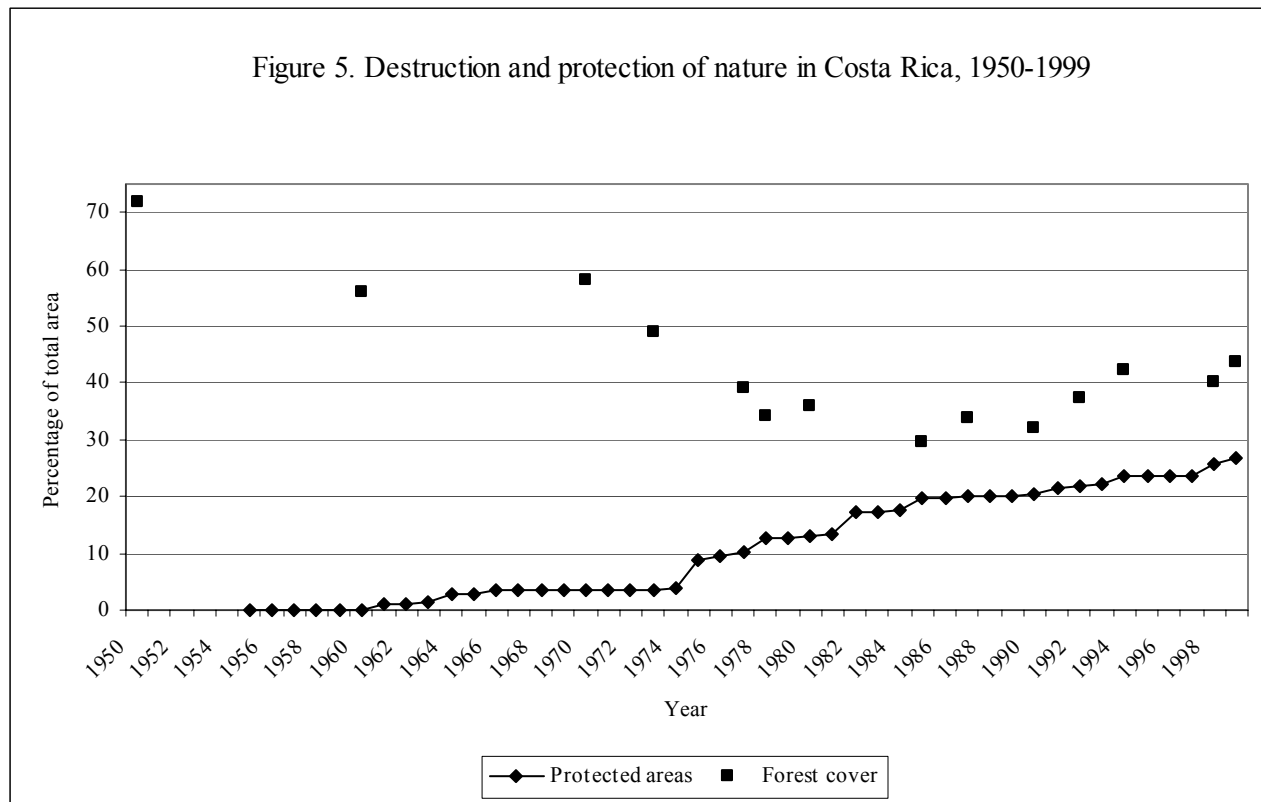


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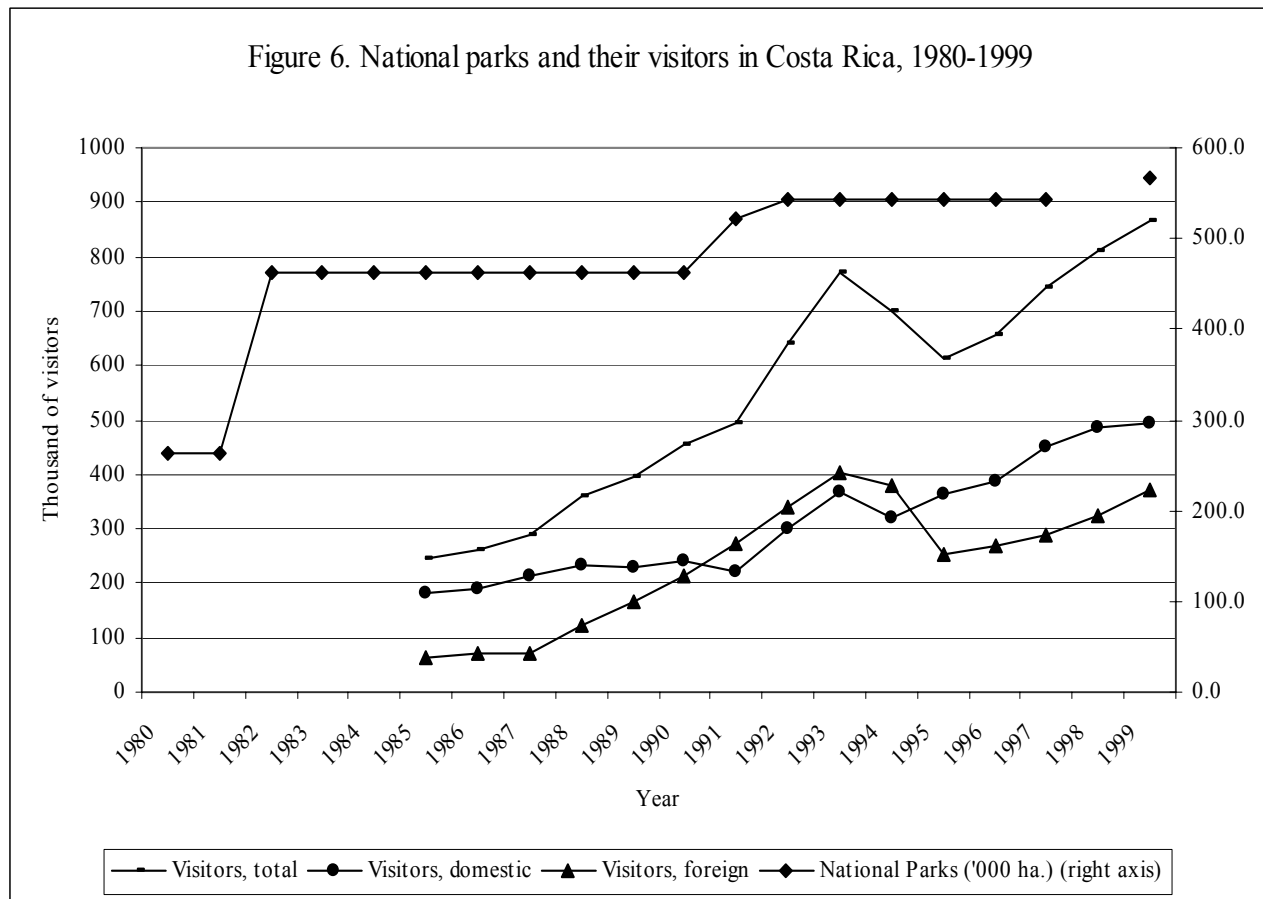


Source: ICT.

Figure 5. Destruction and protection of nature in Costa Rica, 1950-1999



Source: Estado de la Nación, ICT, Meza & Bonilla (1990), and Ministerio de Ambiente y Energia (1998).



Source: Estado de la Nación, and Ministerio de Ambiente y Energía (1998).