HARVARD Kennedy School
Building State Capability

CASE STUDY C-010G

How Monkeys Trade Bananas for Microchips:

The Evolution of Export Sophistication in Costa Rica

KRISTIN HIMELEIN & MATT ANDREWS

2012

INTRODUCTION

Academics and economic development practitioners generally agree that shifting from low skill agricultural activities to high skill technology exports leads to an increased standard of living for the population. Indeed, this has been the case for the Central American country of Costa Rica, which saw significant growth following the arrival of the microprocessor giant Intel in 1997, with real GDP per capita expanding over 20 percent from 1997 to 2004. Costa Rica, despite an educated population, had almost no experience with electronic manufacture of this nature. In the 1980s it was a banana producing country with little prospect of more.

This leaves the question as to how the country was able to execute this transition and if the results are replicable for other countries. This case outlines some aspects of such story to facilitate a discussion about how countries practically move from product to product and develop.

KEY POINTS

- In the 1980s, Costa Rica was a banana exporting nation that had tried to pursue other industries with little success.
- CINDE, a newly created agency, began by promoting exports in nontraditional agriculture, fishing, and garment production leading to an increase in both exports and jobs.
- In the early 1990s, pressures from increasing wages and decreasing competitiveness in apparel manufacturing pushed CINDE to consider other options.
- CINDE began a lengthy process to court intel by learning about opportunities and constraints, sharing these, facilitating responses, and allowing a coordinated solution to emerge.
- This case suggests that networked connections, careful research, and selective targeting can overcome existing shortcomings and allow countries to move quickly to a more complex basket of exports.

Stage One: From Bananas to Garment Processing

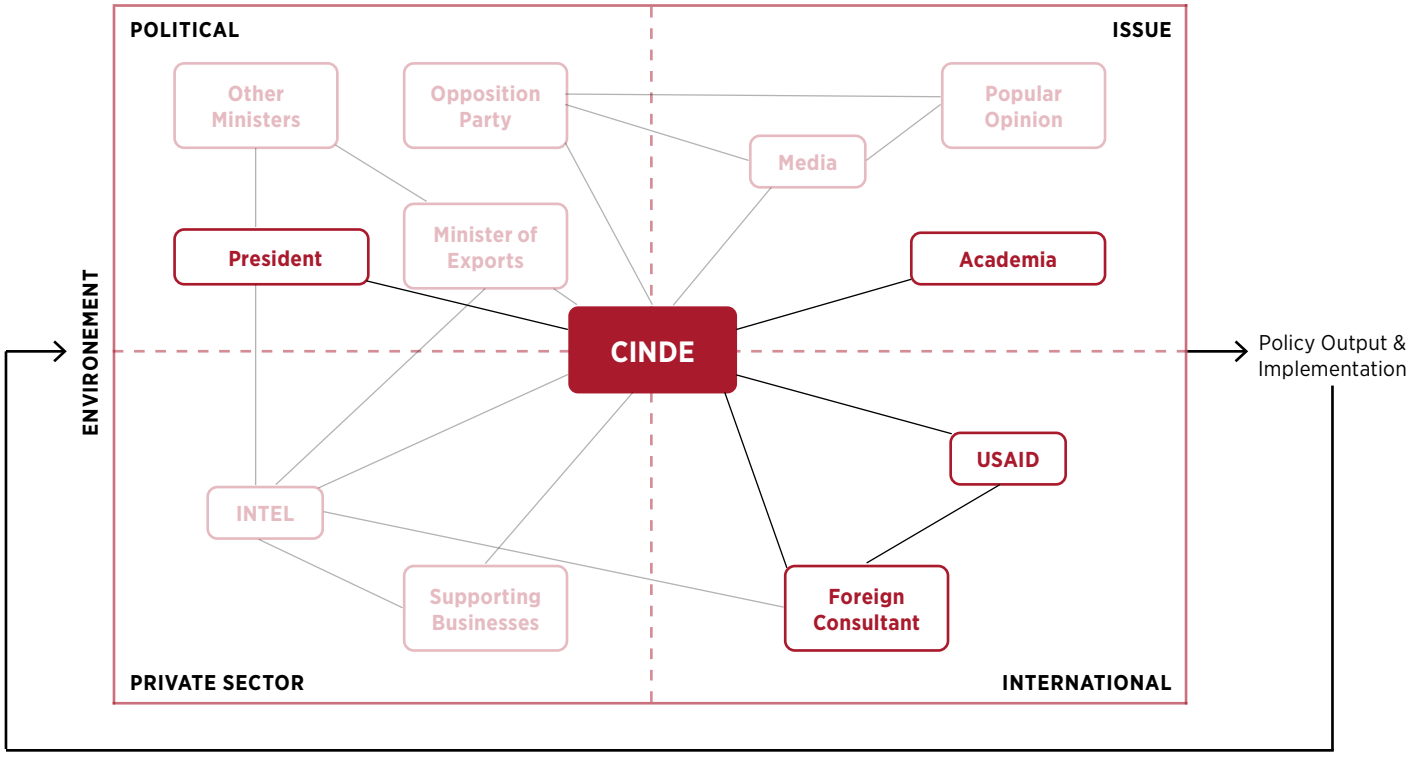
In the 1980s Costa Rica was predominantly a banana exporting nation. Efforts had been made to pursue other industries, but these were largely unsuccessful. The United States government was an important ally of Costa Rica at this point and provided significant support to the country's economic policy-making processes. Officials working in the USAID office in Costa Rica created an agency called CINDE. CINDE's main function was to encourage export-promoting activities, as opposed to import substitution, as part of Washington's overall growth and stability agenda in Latin America. At this point in Costa Rican history, the economy was floundering due to the oil shocks of the 1970s, failing prices for traditional commodities, such as bananas and coffee, and high interest rates on foreign debts.

CINDE began as a coalition of foreign aid officers, government officials and private sector leaders, fully funded by the United States, and with the ability to work outside of government structures to promote foreign investment. The plans for the new group were developed externally, and presented to the reluctant then-President Monge, along with a new Ministry of Investment and Exports, as a complete plan for promoting Costa Rican exports. Government reluctance stemmed from the failure of a similar initiative called the Centro de Promoción de Exportaciones e Inversiones [CENPRO] which had been charged with similar duties.

The initial formation of CINDE closely mirrors the development of traditional issue networks and policy communities as outlined by Fiona Nunan in her study of changes in packaging waste policy in the United Kingdom.[1] There was initially a wide range of players involved in export-promoting activities, widely constituting an issue network, each seeking subsidies and funding for their particular initiative. Eventually a policy closed policy community developed around the issue, with USAID officials hand-picking the players they thought to be most appropriate. The network began as a series of informal breakfast meetings every two weeks. It took almost a year to develop the formalized structure it would have when it was officially launched in January of 1983. The final composition consisted of successful businessmen, many of which were current or former heads of business chambers, academics, and technocrats. About 50 percent of participants were active members of the ruling party, giving the nascent CINDE access to the highest levels of government almost immediately. The activities of this group were also buttressed by copious input from foreign consultants hired by USAID.

Under the tutelage of USAID, CINDE promoted non traditional agriculture, such as cut flowers, horticulture and pineapple cultivation, as well as fishing and garment production activities. It achieved these goals by directly influencing "political parties, the legislature, and the president, … the inner core of actors, with important roles in democratic representation, in framing the policy agenda, and in formulating, adopting and implementing policies."[2] CINDE was able to do this directly through the placement of "Trojan Horse" ministers into the Monge, and later Arias governments, or indirectly by the use of academics and foreign consultants to draft policy papers for the government espousing these programs. Using Hugh Pemberton's model of policy networks,[3] we see that the majority of the impetus for policy change came from international actors and the issue network (academic, press and non-governmental civil society organizations). Change was driven mostly from the outside, pushed by USAID, with CINDE used as a medium to connect and convene and influence those directly in control of the policy making process.

By most measures, the non-traditional export programs were successful, as between 1983 and 1992, non-traditional exports rose from 90 to 781 million USD, or from ten to 42 percent of total exports. The total number of jobs created is estimated to be approximately 18,000.[4] Despite this, however, by the early 1990s pressures from increasing wages were decreasing Costa Rica's competitiveness in apparel manufacturing sectors, and CINDE began to consider other options in export promotion.



Stage Two: Intel

Costa Rica was saved from this situation when Intel decided to locate a plant in the country. The placement of the Intel plant in Costa Rica was the product of a number of complex factors. Firstly, the general nature of Intel's production is well suited to being located off-shore, despite the fact the primary market remains in the developed world. Because microchips are extremely lightweight, transportation costs are comparatively low compared to the overall cost of production. Therefore the majority of the variable costs are in labor. As long as the labor supply has the necessary level of skill to reliably produce the product, Intel could significantly cut costs by moving off-shore.

Intel's decision was also helped by factors Deborah Spar identified in her extensive study of Costa Rica and high technology. She notes that these factors fall into three broad categories: country characteristics, negotiation tactics, and specific concessions.[5] She notes that existing factors inherent to Costa Rica drive the decision. The country enjoyed "[a] good supply of technicians and engineers at relatively low cost,... widespread knowledge of English, the country's well known political stability and democracy, as well as a developed legal system (i.e. rule of law) and low levels of corruption... a high quality of life, with good access to health services, nightlife and cultural amenities, and natural resource." Spar argues that these characteristics would not have become known to Intel if it were not for CINDE, however, and that CINDE played a large role the coordination of the remaining two factors (negotiation tactics and concessions).[6] Spar describes CINDE's impact as:

> *Among investment promotion agencies, CINDE is better structured and more effective than most. As a non-profit, autonomous organization it maintains strong ties to both the government and business community... It promotes the country to potential investors, and then acts as their advisor in the subsequent process, helping the foreign company understand the rules, regulations, and procedures in Costa Rica and working through any substantive issues that might arise.*[7]

CINDE's interactions with Intel began in the early 1990s when their focus shifted from garment manufacturing as a result of increasing wage pressures in this sector. They started pursuing multinationals, given the country factors noted above, and had modest success in attracting investment from US-based corporations. Their experience did not prepare for the size of Intel's $300 million planned investment.

Costa Rica was not even considered when Intel first generated its long list of candidates for the new Assembly and Test Plant [ATP] it wanted to build, with countries like Mexico and Brazil commanding more attention. Costa Rica was small and insignificant in comparison to these powerhouse countries. CINDE had offices in New York and Los Angeles, however, and heard about Intel's plans. CINDE representatives in its US offices began meeting informally with Intel executives and pushed hard for these executives to consider Costa Rica as a potential addition in its long list. Initially, there was little response from Intel, but the company finally responded with interest in November 1995, and invited the director of CINDE's New York office to the head office in Santa Clara, California.

CINDE responded by forming a three-member team especially designed to court Intel. The team included one person assigned to legal regulation, taxation and free trade zone issues, a second covering human resources and education, and a third to deal with real estate, construction and permits. The focus areas were specifically targeted in response to information CINDE representatives found were important to the Intel selection team. This team consisted of management people with experience in site selection, as well as experts in operations, health and safety, human resources, legal, finance, administration, and public relations.[8]

When Costa Rica finally was added to the long list, it joined Argentina, Brazil, Chile, China, India, Indonesia, Korea, Mexico, Singapore, Taiwan and Thailand.[9] The main criteria for site selection included stable economic and political conditions, including transparent legal environment; human resources without compulsory union membership; reasonable cost structure, which included cost of labor, overhead costs, taxation and the ease of capital repatriation, tariffs and customs fees; "pro-business" environment including government interest in economic development and some level of economic liberalization; logistics and manufacturing lead time, including transportation from the point of manufacture to the point of export, and an expedited customs procedure; and finally a fast track permit process which would allow the company to arrange all necessary permits within four to six months to prevent potentially serious delay which could damage profitability.[10]

The most important of these factors were tariffs and fees, as production would be almost exclusively exported. Based on the above concerns and Intel's goal of having a maximum of 30 percent of revenue from any single category of product coming from a single facility or geographical region, the list was narrowed to Brazil, Chile, Costa Rica and Mexico.[11]

In the spring of 1996, the Intel site selection team began a series of field visits to the sites under consideration. They arrived in Costa Rica in April for a two-day tour, during which time CINDE coordinated their travel and meetings and generally acted as a host to the visiting executives. The Intel team had meetings with international banks operating locally to discuss the financial infrastructure, meetings with international accounting firms to discuss the reliability and transparency of the country's legal and financial institutions, and meetings with international electronics manufacturing firms and other multinationals to discuss the general business and operating climate.[12] Many of the players the Intel team met with had been a member of CINDE's team at some point since its initiation, which contributed to a fairly consistent and positive message emerging across all Costa Rican enterprises.

CINDE also arranged for the team to meet with Jose Rossi, the Minister of Foreign Trade, and with Jose Maria Figueres, the president of the country. The president had been closely following CINDE's interactions with Intel for months and continually expressed support of their efforts. He became personally involved in the negotiations and pledged to "do whatever necessary" to accommodate Intel.[13] The president appointed Rossi as the point man for Intel, creating a direct link for future negotiations and a connecting point for Intel into the broad and distributed Costa Rican government.

Following the initial visit, Costa Rica, along with Mexico, had become the main contenders for the new plant. Representatives of the country visited Intel in California weekly to examine specific details, and Intel executives visited Costa Rica regularly as well. CINDE served as their contact throughout these visits. Through its contacts in both the public and private sectors, CINDE was able to arrange all necessary meetings and procure necessary data quickly and efficiently. Given the connection with Minister Rossi, CINDE could guarantee 24-hour turnaround from government on any request from Intel—whether it was about education, transportation, health care access, or building codes. They also used their extensive research and industry knowledge to brief ministers prior to meetings with Intel, anticipating and preparing for potential issues.

Intel's main concerns about Costa Rica included the relative size of Intel compared to the size of the country, the lack of physical infrastructure, such as power plants and port facilities, the questionable level of technical education of the Costa Rican work force, and financial incentives package from the government. While Costa Rica offered the standard package offered to all companies that expanded into its free trade zones, it would not offer any additional incentives specifically for Intel. This was in contrast to Mexico, which was willing to offer additionally land, lower electricity rates and special employee training.[14]

CINDE was able to work with a variety of entities in government to devise a plan to address Intel's concerns, and improve the general incentive structure to compensate for the lack of specific inducements. In addition to specific recommendations outlined below, they also argued that the small size of Costa Rica was actually an asset, as there were fewer conflicting interests to coordinate. CINDE went to great lengths to demonstrate this, working out compromises between regional and central governments in advance. This was in stark contrast to Mexico, where local and national officials often failed to coordinate.

There were also other major drawbacks to Mexico, such as currency instability issues and mandatory union membership. Though the government offered to make an exception to the union law for Intel, as it had for other multinationals, the company worried this was not a sustainable equilibrium. On November 13th, 1996, Intel announced that the new plant would be built in Costa Rica, provided the government delivered on the agreedupon contract.

The government and CINDE were now faced with the challenge of meeting Intel's demands in the necessary time period. Beyond the specified terms of registration in the free trade zone, and acquiring the necessary environmental and construction permits, there were three problems that would need to be addressed in Costa Rica: inadequacies in its physical infrastructure, shortcomings in technical education and insufficient financial incentives.[15] In a company such as Intel, which earned up to $150 million per month immediately following the launch of a new product, even short expected delays would have been enough to shift plans to another country.[16] The government had to propose and pass the necessary legislation extremely quickly.

The policy making process, however, was notoriously slow. This is detailed by Rodriguez-Clare who describes previous efforts at passing new legislation: "The strong opposition from public sector unions and the political difficulties to pass reform bills through congress (given the lack of a strong majority for the governing party and the existence of congressional procedures that encourage filibuster practices) made [the process] very difficult and progress was frustratingly slow."[17] The result of such constraints led to Costa Rica having the lowest average approval rate in the region for legislative initiatives, at around 41 percent.[18]

As in the earlier cases of garment production, CINDE played a large role in facilitating the legislative process and ensuring it was not as slow as usual. In this case, however, CINDE made use of links to all parts of the policy making terrain to maximize the speed at which legislation could be passed. Within the political arena, the group used its links to the president and Minister of Foreign Trade to advance the legislative process, with a particular emphasis on personal involvement from the president. He "impressed upon all of his ministers the importance of the process and … was extremely active, urging ministers to expedite critical matters and authorize the initiation of new programs designed to close the gaps between what Costa Rica had and what Intel needed."[19] The president was instrumentally involved with pushing the agenda forward on both education and infrastructure. Teams were developed to ensure coordination across government, and facilitate the necessary response to Intel:

→ With regard to education, President Figueres and CINDE developed a team consisting of Intel Human Resources staff, CINDE staff, the Minister of Education, the Minister of Science and Technology, and officials from institutions of higher education to address Intel's concerns. The team developed a three part strategy of one-year technical "certificates" specifically designed for those planning to work at Intel, one-year "associate degrees" which prepared students lacking in qualification to move on to the certificate program or to work at the semi-conductor manufacturing facility, and increased language training both in English for Costa Ricans and in Spanish for Intel's expatriate community. These proposals were submitted to the Ministry of Education and passed quickly with the urging of the executive.[20]

→ Infrastructure was slightly more complicated as the government would need large amounts of capital for new projects and also needed to be careful of appearing to be giving Intel special treatment. CINDE worked to broker compromises with the Ministry of Transportation to share the costs of new roads, port and airport facilities, and with the Costa Rican utility company [ICE] to build new power generating facilities and reform the rate structure.

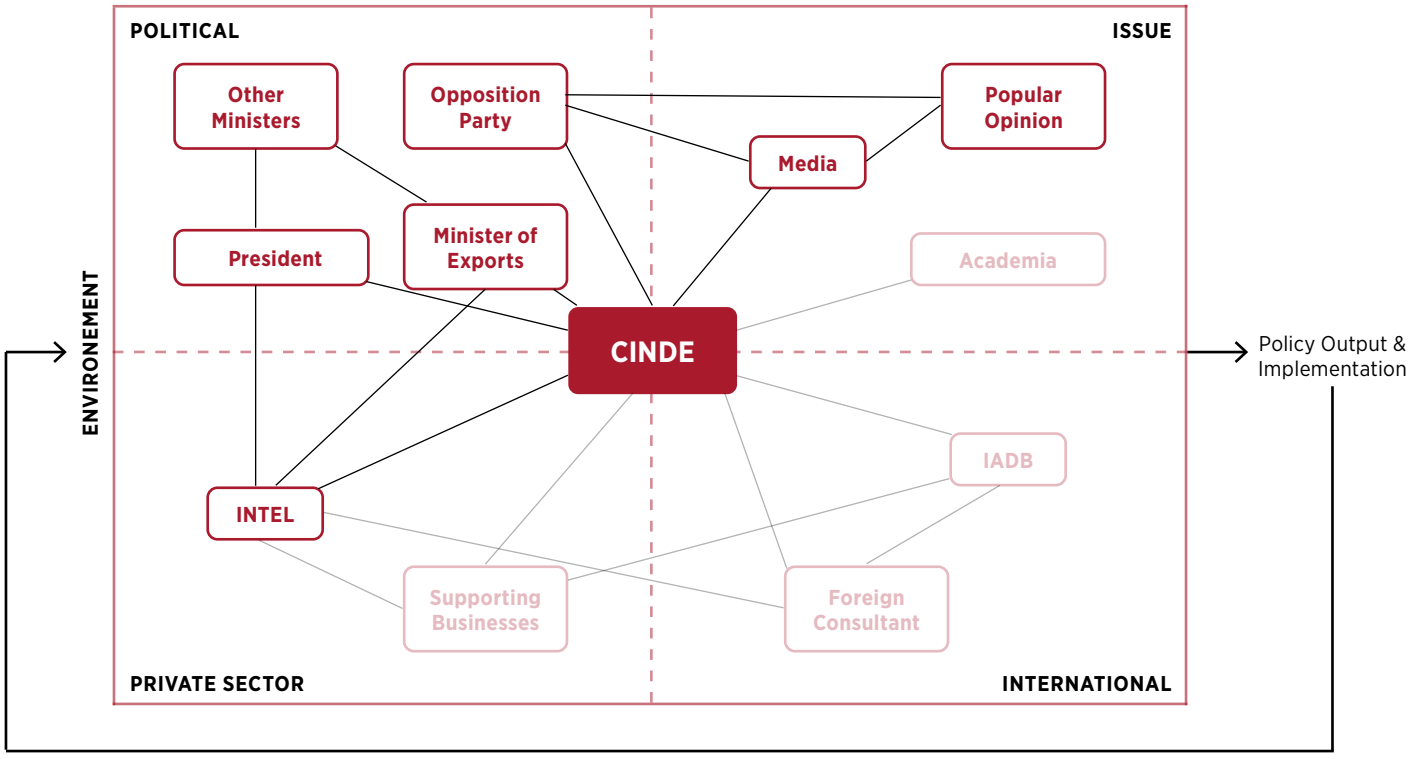
→ Financial incentives were even more complicated. Costa Rica was willing to offer Intel its standard free zone package, which included: 100% exemption on import duties on raw materials, components and capital goods; 100% exemption on taxes on profits for eight years, and 50% on the following four years; 100% exemption on export taxes, local sales and excise taxes, and taxes on profit repatriation, 100% exemption on municipal and capital taxes, no restrictions on capital repatriation or foreign currency management; fully expedited on-site customs clearance; ability to sell to exporters within Costa Rica; and ability to sell up to 40% in the local market with exemption from sales tax.[21] What remained was a one percent tax on total assets, a sizable amount in the case of Intel, which the government was able to appeal to the Attorney General to change. The change in law applied to all companies, however, so that the government could not be accused of favoritism.

In addition to addressing the three main concerns of Intel, CINDE also played a major role in managing Intel's relationship with the opposition party. Relations with the opposition party were incredibly important due to the nature of Costa Rican elections. Because presidents could not serve more than one term, there is large potential for change in the executive. Intel need to know that political transition would not change the nature of their arrangement.

CINDE also managed the relationship with environmental and other members of the issue group. An illustrative example of this occurred later in the project. During the construction phase, digging crews accidentally unearthed a pre-Colombian archeological site. On the advice of CINDE, Intel immediately hired the premier researchers in the field to carry out an expedited excavation, donating all findings to the national museum. What could have been a major source of negative publicity for Intel turned out to be a large boost for the company's image in the country.

The following figure shows that the policy terrain had changed since the garment manufacturing days. CINDE took much of the original initiative in the project, but the government, particularly President Figueres, was also an active participant, and contributions were coordinated from a wide range of local players—especially across government.

HISTORICO/SOCIO/POLITICAL CONTEXT, CULTURAL NORMS AND VALUES, ETC.
ORGANIZATIONAL AND NETWORK CULTURE, COMMITMENT, COHESION, AND STRUCTURE



Stage Three: Post Intel

CINDE continues to have an active role in the Intel relationship. After the initial negotiations and building of the plant, CINDE began to take steps to cement the relationship and to encourage expansion of the facility. This fits with the Intel model which generally involves expanding existing plants and taking advantage of the current skills of their workforce, rather than starting new elsewhere. This tendency is evidenced by recent extensions of other global plants in Malaysia, Israel, the Philippines, Ireland and China.[22] To strengthen the bonds and facilitate expansion, CINDE pursued a three pronged strategy:

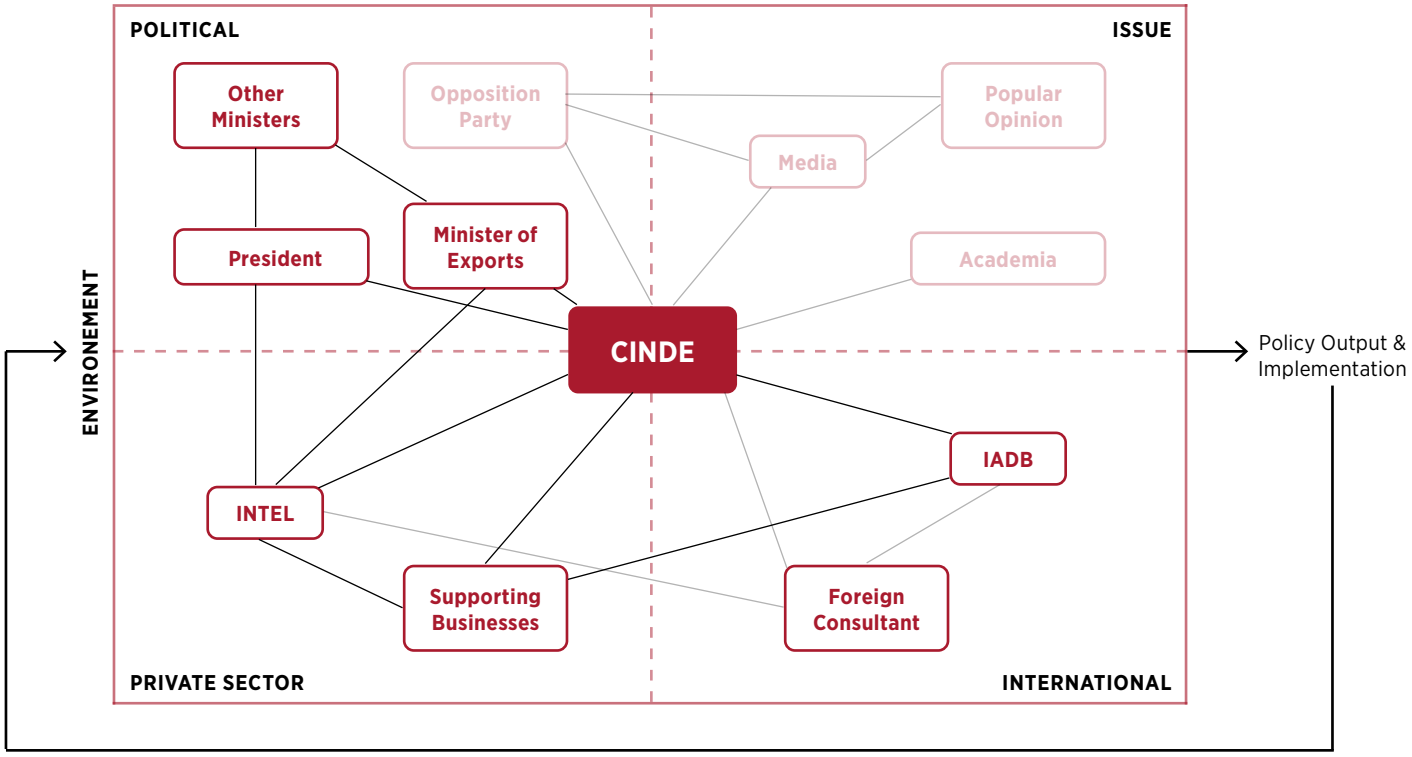
→ First, CINDE has continued in its efforts to attract high technology firms to Costa Rica. "Given Intel's reputation for its rigorous site-selection research, other companies can in a sense 'free-ride' on Intel's research and be much more confident about investing in the country. 'Intel Inside' became a credible 'stamp of approval' for Costa Rica as an investment location."[23] By cultivating an environment where there are large numbers of technology firms, there will be learning-by-doing externalities that will create a virtuous cycle of future investment. Currently, the electronics cluster is the largest of Costa Rica's export sectors, and includes 55 companies, 42 of which are foreign investors. Approximately 12,000 people are employed in the cluster and the total annual value of exports is more than $1.65 billion in products.[24] Additionally, CINDE continued to research new market opportunities, and to refine its investmentattraction strategies. These opportunities included the production of medical devices, and expansion of the business services sector with Procter and Gamble's decision to establish a [Global Business Center] for the Americas in the country."[25]

→ Secondly, the organization serves as a feedback mechanism for the company. "'A country cannot just attract a foreign investor and leave it alone,' Julio Acosta, CINDE's Managing Director at the time [2000], said of the program. 'They have to provide aftercare in order for the investors to prosper and become spokespeople in favor of a country.' The executives responsible for individual investor relationships, called Investment Executives, meet regularly with established investors, taking note of their needs, and channeling their issues to the new coordinator in charge of aftercare services. This position was also responsible for policy advocacy, lobbying the government for continuous improvement of the operating environment, helping to ensure investor satisfaction, collaboration with other investors, and reinvestments."[26] This feedback is not limited to Intel, but also extends to other large investors, such as Motorola, Baxter Healthcare and Conair. In this capacity CINDE ensures investors are satisfied in the current environment and has the incentive to expand production in Costa Rica.

→ Finally, CINDE, in partnership with the Inter-American Development Bank, has taken steps to support the supplier network in Costa Rica. CINDE believes that strong backward linkages to local suppliers will help "anchor foreign investors through tighter and more proximate supplier relationships."[27] Also, these supplier companies generate multiplier effects for the rest of the economy, increasing incomes and employment. Though this program has received support from a number of outside agencies, it has had only limited success. Many international supply companies chose not to invest in Costa Rica, considering it too risky of an investment with only one buyer.[28] Currently, "locally acquired direct materials are only 2% of the total value Intel exports, [though] when a broader range of goods and services is considered, supplier purchases are estimated at 10 to 12% of exports,... in the range of US$50-150 million [per year]."[29] The broader local supply network consists of approximately 460 firms and serves Intel with a range of other products and services, through services like "packaging materials, logistics, maintenance of clean-rooms, equipment and facilities, information technology (IT) services, gardening, security, health services, catering and so forth." These services account for 76% of Intel's local purchases.[30] It is difficult, however, to demonstrate the effects of these backwards linkages on the economy overall, as services as a percentage of GDP has not increased since Intel's arrival, despite declines in the agricultural sector.[31] This would indicate that people no longer in agriculture are more likely to find employment in manufacturing rather than services.

Using the policy terrain schema, CINDE's current strategy is focused in the private sector quadrant. CINDE is using international and political connections to bolster the effectiveness of supporting businesses to anchor the larger players. They are also making use of feedback to maintain a positive environment for private sector expansion of all companies.

HISTORICO/SOCIO/POLITICAL CONTEXT, CULTURAL NORMS AND VALUES, ETC.
ORGANIZATIONAL AND NETWORK CULTURE, COMMITMENT, COHESION, AND STRUCTURE



Implications

It would be difficult to say that Costa Rica's results are generalizable to other developing nations. Without the correct mix of initial conditions, including a history of stability and an educated workforce and proximity to and political support from the United States, the possibility for investment by Intel would never have existed. Despite this, however, there are lessons to be learned from the effectiveness of CINDE, especially when one contrasts the experience here with that of export promotion organizations in other countries; many of which have not achieved the same results. One lesson, perhaps, is that CINDE was able to work outside the confines of the government structure and make use of its position at the intersection of the political, private sector, international and issue quadrants of the policy making terrain. It was like the central nervous system in a complex body, learning about opportunities and constraints, sharing these, facilitating responses, and allowing a coordinated solution to emerge. This lesson suggests that networked connections, careful research and selective targeting can overcome existing shortcomings and allow countries to move quickly to a more complex basket of exports.

What other lessons emerge, and how relevant may they be for your country?

Bibliography

1 Nunan, Fiona. 1999. Policy Network Transformation: the Implementation of The EC Directive on Packaging and Packaging Waste. *Public Administration*, 77(3), 621-638.

2 Stein, Ernesto. Tommasi, Mariano. Echebarría, Koldo. Lora, Eduardo. Payne, Mark. 2006. *The Politics of Policies: Economic and Social Progress in Latin America.* Washington DC: The Inter-American Development Bank, pp., 27

3 Pemberton, Hugh. 2000. Policy networks and policy learning: UK economic policy in the 1960s and 1970s. *Public Administration,* 78(4), 771-792.

4 Clark, Mary A. "Transnational Alliances and Development Policy in Latin America: Nontraditional Export Promotion in Costa Rica." *Latin American Research Review.* (1997), Vol. 32, No. 2, pp 84.

5 Spar, Debora. 1998. Attracting High Technology Investment. *Foreign Investment Advisory Service.* World Bank and the International Finance Corporation. Occasional Paper 11, pp. 12.

6 Rodriguez-Clare, Andres. "Costa Rica's Development Strategy based on Human Capital and Technology: how it got there, the impact of Intel, and lessons for other countries." *Journal of Human Development.* (2001) Vol. 2, No.2, pp. 317

7 Spar, 16

8 9 Spar, 7

9 10 Spar, 8

10 11 Spar, 8

11 12 Spar, 8

12 13 Spar, 9

13 14 Spar, 10

14 15 Spar, 11

15 16 Spar, 11

16 Spar, 17

17 Rodriguez-Clare, 316

18 Stein et al., 43

19 Spar, 17

20 Spar, 17

21 World Bank Group, 8

22 Spar, 5

23 Rodriguez-Clare, 13

24 The World Bank Investment Group: Multilateral Investment Guarantee Agency (MIGA) “The Impact of Intel in Costa Rica: Nine Years after the Decision to Invest”, Investing in Development Series, The World Bank, (May 2006), 20

25 Rodriguez-Clare, 12

26 World Bank Group, 11

27 World Bank Group, 10

28 Rodriguez-Clare, 14

29 World Bank Group, 16

30 World Bank Group, 22

31 Economist Intelligence Unit, captured April 26, 2007