



Costa Rica and El Silencio: A Story of Economic Development for Students

Costa Rica's decision to eliminate its military and channel funds into environmental protection and public services has aided in its success. GDP per capita has grown, extreme poverty has been almost eradicated, and it remains a popular destination for tourists. However, the benefits do not trickle down to everyone in Costa Rica. For example, the remote village of El Silencio does not benefit much from tourism. To strengthen its economy, the village created a cooperative and employed an alternative local currency, the Udi, with mixed success. Costa Rica and El Silencio are real-world contexts for applying multiple economic themes.

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1. Introduction

Costa Rica is in many ways a Central American success story—a popular destination for tourists; the iconic location of movies such as *Jurassic Park* (1993), *Paddington Bear* (2014), and *Suicide Squad* (2016); and home of Scarlet Macaws and sloths who thrive in Costa Rica's nationally protected forests. Much of this success is due to Costa Rica's progressive economic policies that abolished the military in order to fund education and environmental concerns. With illiteracy of only 2% (World Bank, 2020l) and a thriving ecotourism industry, Costa Rica offers a compelling model for development.

Standards of living are generally high in Costa Rica, especially in comparison to some of its Central American neighbors. However, rural villages do not always enjoy the same degree of development. El Silencio, for example, is a rural village born from vacated United Fruit Company land. Remote, agricultural, and landlocked, El Silencio is a village-turned-co-op that has adopted an alternative currency to stimulate local economic development. We traveled to El Silencio to conduct our own investigation—living in the community, interviewing locals, and speaking with officials. Because our travels brought us to the capital city, indigenous communities, rural villages, and popular tourist destinations, we gained a balanced perspective on standards of living and culture. We were struck by the pride people had in their country, its progress, and its ambitious commitment to the environment. Even in modest El Silencio, we saw entrepreneurship born out of a need to compete with surrounding areas that offered greater opportunities for workers and consumers. We present here a discussion of Costa Rica and El Silencio to provide high school teachers a context for exploring economic themes in the Voluntary National Content Standards. Content could also be integrated into a college-level economics course.

Contextualizing economics education in current, real-world scenarios helps engage students and makes abstract concepts more concrete. When those scenarios are international, it strengthens students' global perspectives, fostering an understanding of the world around them. As study abroad leaders, we have found place-based learning—educational experiences emerging from being in the place—to be effective. In the absence of travel opportunities, case-based instruction can add meaning to the study of economics. The scenarios discussed in this paper highlight ways both governments and everyday citizens make decisions to address national or local problems. Extension activities and discussion questions allow high school teachers and college instructors to expand on the topics.

2. Connections to Voluntary National Content Standards

This unit incorporates many economic concepts that appear in states' content standards. Since standards vary by state, Table 1 offers correlations to the Voluntary National Content Standards in economics, developed by the Council on Economic Education (2010). The same concepts are generally incorporated into colleges' general education economics offerings and principles of economics courses. Some topics are relevant for courses in government or international studies, where economic themes are often infused.

Table 1. Correlations to Voluntary National Content Standards

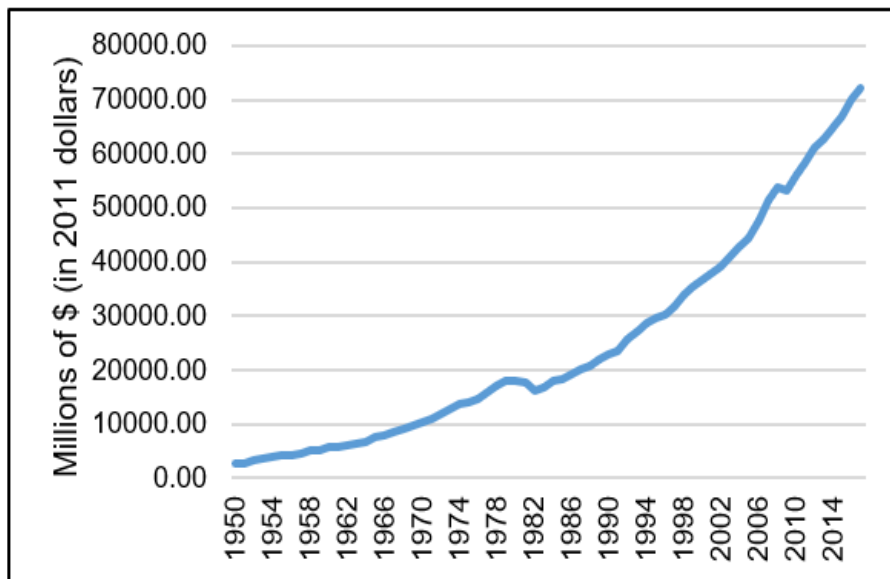
Standard	Topic	Connections to Unit
1	Scarcity	Costa Rica facing resource constraints, opportunity cost associated with military spending
2	Decision-Making	Decision to eliminate military and investment in education/healthcare/environment, cost vs. benefits, tradeoffs
4	Incentives	Incentives created for protection of land, demand for timber as perverse incentive, green leaf program as incentive for businesses to be green, incentives to join El Silencio co-op, incentives to spend within the co-op community, incentive to go outside the community for shopping, incentives created by program that pays landowners for ecosystem services
5/6	Trade/ Specialization	Costa Rica's changing economy and composition of exports, comparative advantage, specialization in types of manufacturing
7	Markets	Costa Rica in the global tourism market, market for coffee, market for bananas
7/8	Prices/Role of Prices	Relative prices (El Silencio v. larger towns), exchange rates as price between alternative and national currency, role of prices as an incentive, Law of Demand
9	Competition/ Market Structures	Competition on the basis of price (El Silencio v. larger towns), competition leading to price decreases, benefits to consumers
10	Institutions	El Silencio co-op as an institution, institutional rules, property rights in El Silencio creating incentives for residents
11	Money & Inflation	Alternative currency used in El Silencio, pegging currency to the national currency, circular flow of money, multiplier and leakage affecting economic activity in the co-op
13	Income	Income growth over time (GDP per capita), concerns about income inequality, reduction in extreme poverty, circular flow of income in a rural community, multiplier and leakage, alternative measures to GDP
14	Entrepreneurship	El Silencio co-op as an entrepreneurial model to stimulate rural economic growth
15	Economic Growth	Increased living standards (GDP per capita), decrease in extreme poverty, investment in human capital, foreign direct investment
16	Role of Government	Environmental protection as a public good, environment as national priority for Costa Rica, sustainable production of energy, programs to pay landowners for ecosystem services, reduction of externalities
18	Economic Fluctuations	Circular flow of income in El Silencio, alternative currency started in 2008 (Great Recession), depressed palm oil prices
19	Unemployment & Inflation	Jobs as incentives for joining the El Silencio Co-op

20	Fiscal & Monetary Policy	Elimination of military spending, focus on spending for university education/national healthcare/environment, pegging the alternative currency to the national currency, ballooning national debt
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3. Economy of Costa Rica

Costa Rica, translating to “Rich Coast,” is an upper-middle income nation that is one of the developing economies of Central America (United Nations, 2020). Gross Domestic Product (GDP), in real terms, has increased dramatically for the nation, as seen in Figure 1.

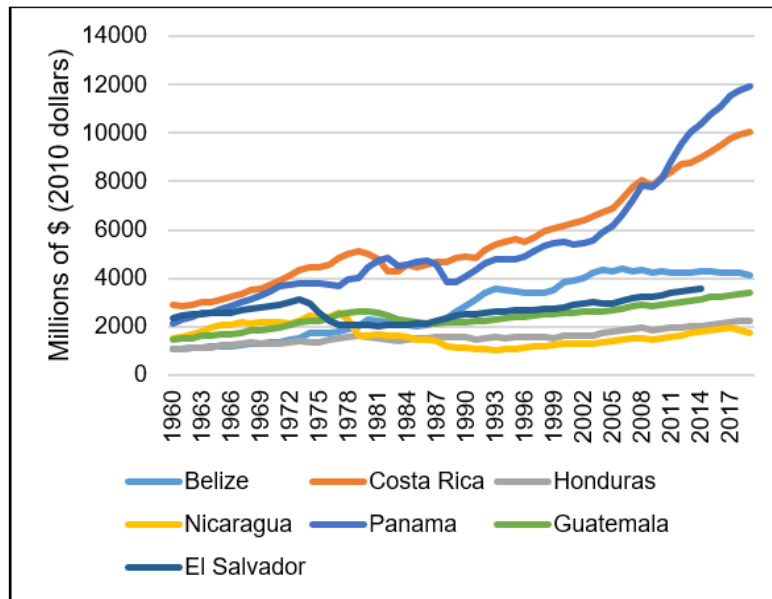
Figure 1. Real GDP for Costa Rica (1950-2017)



Graph generated from data downloaded from Federal Reserve Bank of St. Louis FRED Economic Data database that utilizes estimates from University of Groningen (2019). Similar data available at World Bank (2020c).

As teachers of economics emphasize, though, a country’s GDP is not the best way to measure standard of living. China and the United States offer an excellent example. Respective GDPs of \$14.34 trillion and \$21.37 trillion (2019) made them the two largest economies in the world (World Bank, 2020d). However, China’s resources support a much larger population. When divided by populations to generate a per-capita measure, the figures become strikingly different at \$10,261 and \$65,118 for China and the USA, respectively (World Bank, 2020f). For this reason, Figure 2 details Costa Rica’s GDP per capita, along with its Central American neighbors. Clearly, Costa Rica’s growth in this dimension has outpaced most of the others.

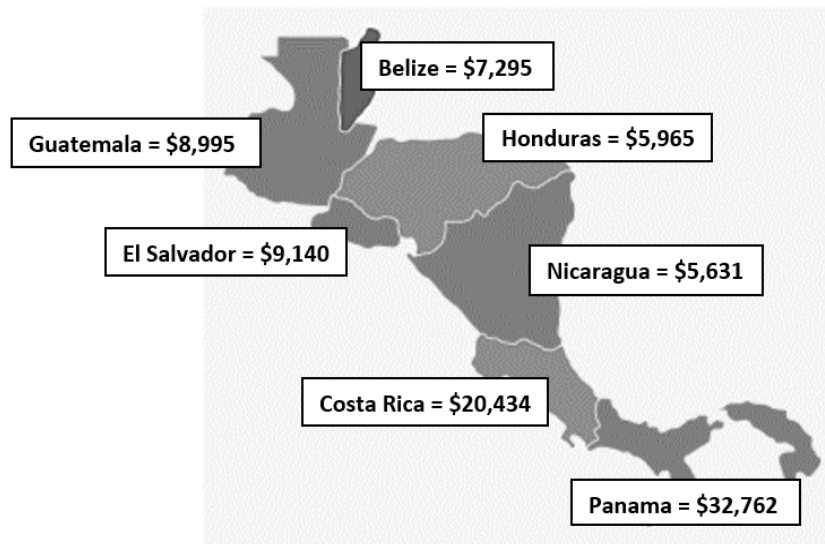
Figure 2. Real GDP Per-Capita for Countries in Central America (1960-2017)



Graph generated from data downloaded from The World Bank, World Development Indicators (World Bank, 2020e).

When comparing countries, analysts often use *purchase power parity* (PPP). Since goods and services have different prices in different locations, PPP controls for cost of living, or what money can buy in that location. Thus, GDP per capita figures using PPP will be higher than those using current U.S. dollars, since money purchases more in Costa Rican prices. For example, Costa Rica's 2019 GDP per capita in current dollars is \$12,238, which is significantly lower than when adjusting for purchasing power (World Bank, 2020f). (A good discussion of PPP is available from Boyle [2021].) Even when controlling for cost of living across the different Central American nations, Costa Rica is far more prosperous than most of Central America, as seen in Figure 3.

Figure 3. Gross Domestic Product Per-Capita 2019 (Purchasing Power Parity)



Graphic generated with data obtained from World Bank World Development Indicators (2020g). GDP per capita, PPP (current international \$).

An unusual strategy dating back to 1948 is credited with putting Costa Rica on an upward trajectory, when the president announced the country would eliminate the military to channel funds into healthcare, education, and environmental protection (Barash, 2013). Military expenditures have an *opportunity cost*—for example, the social investments foregone when money is spent on defense. The decision generated what has been termed the “Peace Dividend.” An immediate result was universal access to education through 10th grade, and this focus on education has continued. Starting in 2018, a year of pre-school and kindergarten became mandatory for admission into first grade in order to promote early education (Apolitical, 2018). In 2019, Costa Rica spent 6.2% of GDP on education (primary to tertiary). By comparison, the United States spent 4.1%, which was also the OECD countries’ average (OECD, 2022). Secondary education rates in Costa Rica showed 85% of those aged 12 to 16 attending high school and 35% of those aged 18 to 24 attending college (Quesada, 2019).

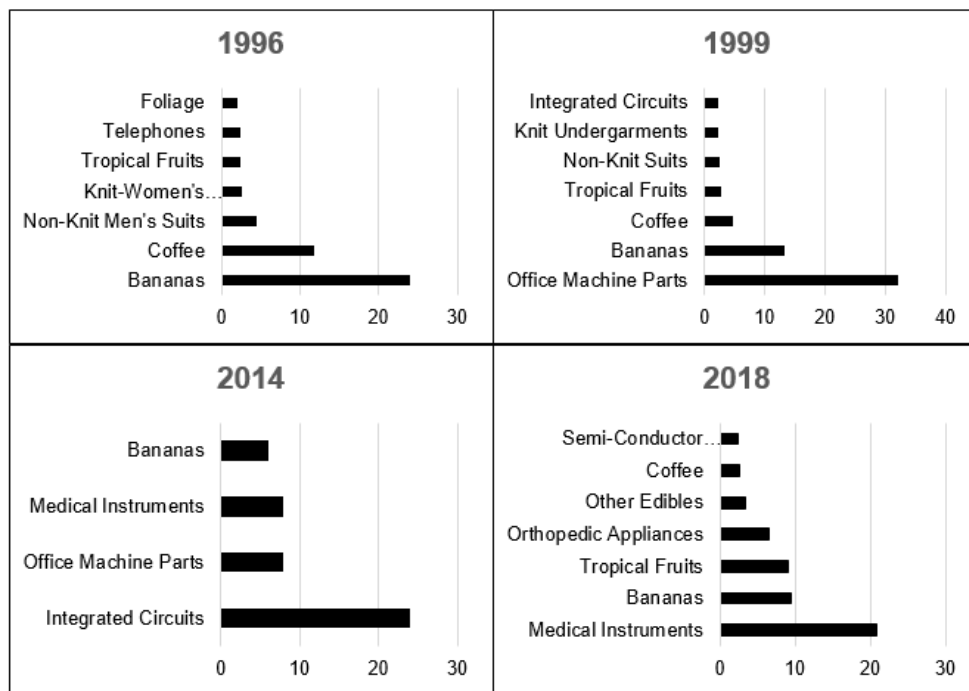
With investment in *human capital*, Costa Rica has positioned itself to attract *foreign direct investment* (FDI), the long-term physical investments made by firms or individuals in other countries, which promote economic growth. For example, when Motorola and Cisco established operations in Costa Rica, they brought high-quality jobs with some degree of permanency. FDI net inflows increased from \$28.9M in 1982 (equaling \$70.9M in 2014) to a high of \$3.24B in 2014 (World Bank, 2020b). Levels have dipped since then, but FDI growth has been dramatic. Export strength doubled in real terms between 1996 and 2018, from \$3.98B in 1996 (equaling \$6.4B in 2018 dollars) to \$12.9B (World Bank, 2020a).

Historically, Costa Rica was more reliant on agriculture, with its biggest exports (by dollar value) being coffee and bananas. Volatility in the coffee market and falling prices made it difficult for farmers to compete with mega-producers such as Brazil. Thus, Costa Rica turned to high-quality and environmentally sound production processes to create a niche in the global market (Samper, 2010). Bananas are no longer Costa Rica’s number one export. However, in 2019, it was the third largest exporter (fresh or dried, including plantains) at just over 7% of the global volume (International Trade Center, 2020). Dole, Del Monte, and Chaquita (formerly

United Fruit Company) are the major players in Costa Rica.

While agriculture is still important, Costa Rica's activities are more diversified as a direct result of investments in education. An early technology-sector entrant was Intel, arriving in 1997 to take advantage of Costa Rica's educated labor force. By 2001, integrated circuits represented 10.7% of export value, peaking in 2013 at 47%. Intel pulled out in 2014. However, Figure 4 indicates the focus on semi-conductors has been replaced by medical equipment (Observatory of Economic Complexity, 2020). There are currently seven firms producing medical equipment, making it the largest segment of exports by dollar value (The Central American Group, 2020).

Figure 4. Percent of Total Exports by Category (for Items Representing at Least 2%)



Graphs created with data obtained from The Observatory of Economic Complexity data visualization tools available at https://oec.world/en/visualize/tree_map/hs92/export/cr/all/show/2018/.

Activities for Classrooms:

- Assist students in using data visualizations tools to create graphs of key economic measures over time, for example GDP, GDP per-capita, rates of economic growth, and FDI, available at <https://databank.worldbank.org/source/world-development-indicators>.
- See how Costa Rica compares to its Central American counterparts in the variables mentioned above.
- Ask students to investigate how Costa Rica compares to other Central American nations in the Heritage Economic Freedom index, available at <https://www.heritage.org/index/> and the Fraser Institute's Human Freedom Index, available at <https://www.fraserinstitute.org/studies/economic-freedom>.
- Illustrate how GDP deflators may be used to convert nominal data into real data for comparisons over time. For example, find nominal GDP figures and convert to real figures to compare across years. An easy to use calculator is available at https://stats.areppim.com/calc/calc_usdrlxdeflator.php.
- Ask students to discuss why investment in human capital plays a role in economic

development. Why might foreign direct investment be influenced by the investment in human capital?

- Ask students if it seems that investment in education has paid off. On what basis do they make this determination?

4. Environmental Focus

Costa Rica has adopted a national environmental ethic, a message made clear through prominent signage and frequent reminders about conservation. Even the currency highlights charismatic species, including the three-toed sloth, Capuchin monkey, and blue morpho butterfly. It is a leading destination for ecotourism, and visitors can enjoy 26 protected areas, 20 national parks, and 24 forest, biological, and wildlife reserves (Embassy of Costa Rica in Washington DC, 2019). Over three million tourists visited in 2019 (Zúniga, 2020), creating a substantial economic impact for a country of five million people. The nation's certification program for sustainable tourism allows hotels and tour companies to earn "green leaves" based on practices relating to wastewater, forest protection, water and energy conservation, engagement with social welfare organizations and the local economy, etc. (Klempner, 2010). This ensures that tourists can create the sustainable travel itineraries they desire and gives businesses an incentive to be as "green" as possible.

Visitors enjoying lush forests may not realize that Costa Rica's history was one of massive deforestation from logging, farming, and ranching. Great benefits accrue from healthy forests—providing habitats, generating oxygen, contributing to freshwater resources, and absorbing carbon dioxide from the atmosphere. These are important *environmental public goods*, with benefits extending beyond the landowners themselves. (Cleaner air is nonrival and nonexcludable and is, therefore, considered to be an environmental public good). Costa Rica has implemented a system for paying landowners for ecosystem services; farmers who undertake sustainable practices or set aside land can be eligible. Fittingly, funding is generated from a tax on fossil fuels, making Costa Rica one of the only developing nations to impose this type of levy (Lewis, 2020). We visited one such project—a nature reserve with incredible suspension bridges—that attracts ecotourists and creates employment without negatively impacting the land. Furthermore, laws have made it illegal to cut down forests without authorization; Costa Rica has successfully stopped deforestation and has reforested (Lewis, 2020). Presently, forests comprise more than 50% of the land in Costa Rica, up from 26% in 1983. However, urbanization, and growing demand for timber (creating an incentive for illegal logging) and energy, have put pressure on Costa Rica's natural environment (World Bank, 2016).

Costa Rica has made monumental strides in clean energy. In 2019, the nation generated almost all its electricity from renewable sources—hydropower, geothermal, solar, and wind—and introduced government plans to eliminate greenhouse gas emissions by 2050. Like many nations, Costa Rica is still reliant on oil and gas (World Future Council, 2020). Greater prosperity has increased the demand for automobiles, creating more dependency on oil.

Activities for Classrooms:

- Ask students to explain in what way protection of forests creates environmental public goods.
- Ecuador, in South America, has approximately 1/3 of its land located in the Amazon jungle. Its former president, Rafael Correa, had to make a choice between drilling for oil or protecting the Amazon. He asked other nations to contribute more than 3 billion dollars to protect the land. If fundraising goals were met, he would not drill. (Kestenbaum, 2013)
 - What might have been the president's justification for asking the world to contribute to protecting the portion of Amazon jungle located in his country?
 - Would it be possible for some countries to act as free-riders in this scenario? Explain.

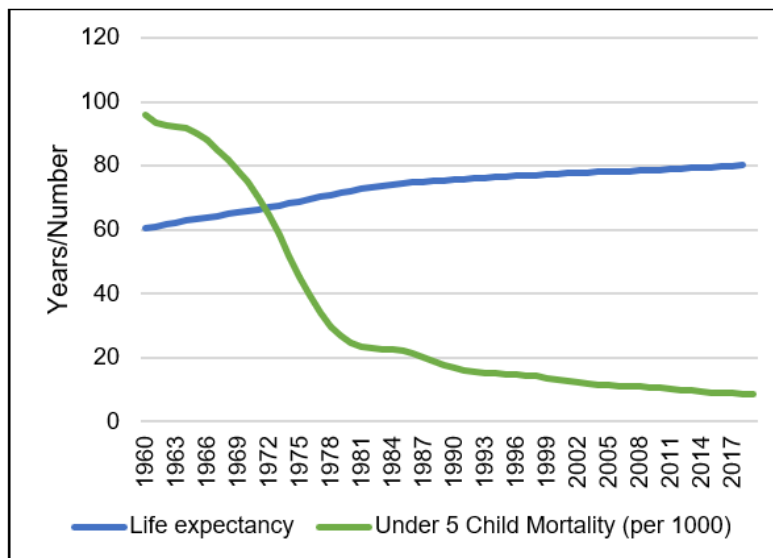
- Do you think that Costa Rica has some people who choose to be free-riders with respect to protecting the environment? In what way are they free-riders?
- Why does it seem particularly appropriate to use a fossil fuels tax to pay farmers to implement sustainable practices?
- Costa Rica has banned sport hunting. What are the possible pros and cons associated with this decision? (Note that there is a TEDx Talk by Mikkel Legarth on this topic. See <https://www.youtube.com/watch?v=GiyQvm9d4tM>.)

5. Human-Centered Measures of Well-Being

There are many dimensions on which economists judge standard of living. Clearly, GDP per capita is valuable but provides an incomplete representation of well-being. For example, rich biodiversity is not directly reflected in GDP; having beautiful macaw birds does not enter into a statistic that measures the goods and services produced (until tourists come to see them). For this reason, broader measures, such as the Genuine Progress Indicator, OECD's Better Life Index, and the New Economics Foundation's Happy Planet Index, have gained traction. (See Kubiszewski [2014] for a nice overview of different measures.) These indices incorporate economic indicators alongside measures related to societal well-being and the environment. In fact, Costa Rica was ranked number one in the three most recent Happy Planet Index rankings, published every five years (Happy Planet Index, 2020).

Statistics describing well-being might include life expectancy at birth. Costa Rica's is the third highest in the western hemisphere at just over 80 (2018), an increase of 20 years since 1960 (World Bank, 2020k). Costa Rica has also seen dramatic decreases in under-five child mortality, the number of children per 1000 live births who die by age five. Figure 5 illustrates these trends.

Figure 5. Life Expectancy (years) and Under-Five Child Mortality (number) for Costa Rica



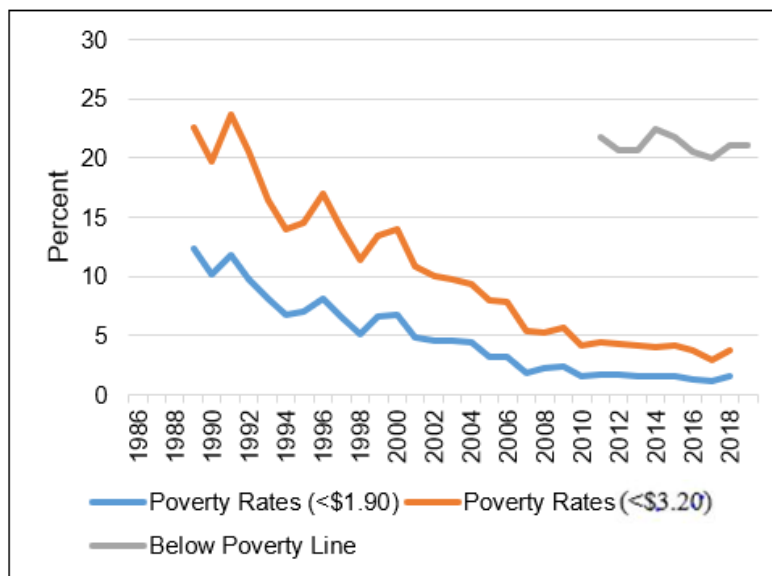
Graphs generated from The World Bank's Economic Development Indicators (2020k; 2020m) exportable data set for Costa Rica.

The degree of *economic freedom* enjoyed by citizens is another important indicator, and Costa Ricans fare well in this measure. Economic freedom relates to the freedom of choice in economic decisions—what to consume, how to invest, decisions about education, choice of career, etc. The Heritage Foundation's 2020 Index of Economic Freedom evaluates twelve

measures in the categories of rule of law, size of government, regulatory efficiency, and market openness. Costa Rica is rated as being “moderately free,” making it the 68th economically freest country. Transparency International ranks Costa Rica 44th in their 2019 Corruptions Perception Index (a lower rank is better), making it the least corrupt Central American/Caribbean nation.

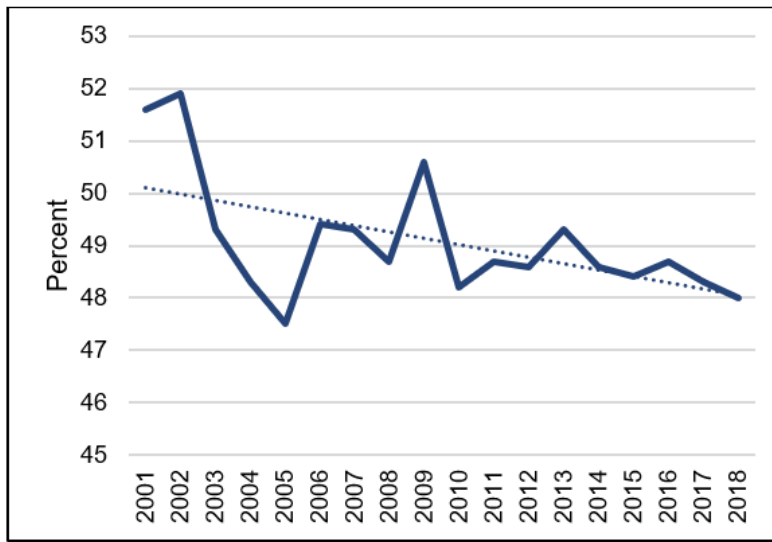
Clean drinking water and electricity are accessible to 99.9% of Costa Rica’s population, and just over 98% has sanitation (World Bank Group, 2020). Costa Rica also offers universal healthcare. Figure 6 shows that extreme poverty (living on less than \$1.90/day) has been practically eliminated, and the proportion of the population living on less than \$3.20 a day has fallen dramatically (World Bank, 2020o; 2020p). Yet, 2019 estimates reveal that 21% of the population still lives below the national poverty line (World Bank Group, 2020). Costa Rica also struggles with inequality, even on Latin American standards. Data from 2018 shows that the top 10% of income earners held 36.3% of the income and the lowest 10% held only 1.5% (World Bank, 2020i), meaning the highest 10% earned more than 24 times that of the lowest 10%. In the US (2016), the richest 10% earn 17.6 times that of the lowest 10%. The Gini coefficient measures the degree of income inequality in a country (higher numbers are better). Figure 7 shows that Costa Rica’s inequality is growing (World Bank, 2020h).

Figure 6. Percent of Population in Poverty in Costa Rica



Graphs generated from The World Bank’s Economic Development Indicators (2020n, 2020o, 2020p) exportable data set for Costa Rica.

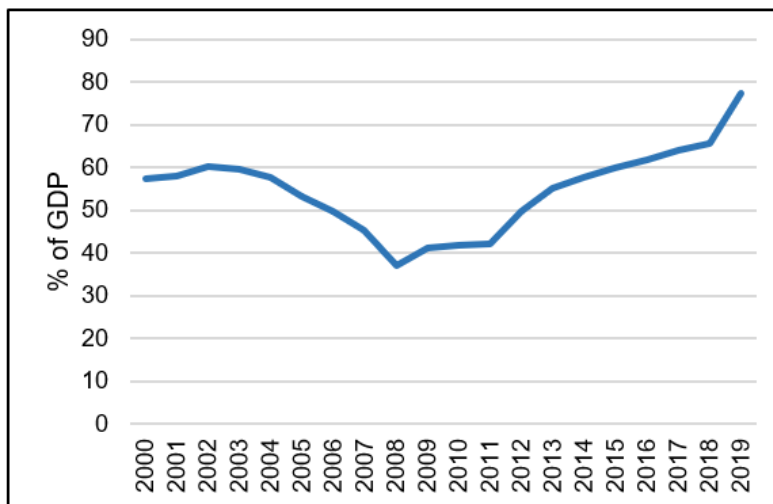
Figure 7. Gini Coefficient for Costa Rica



Graphs generated from *The World Bank's Economic Development Indicators (2020h)* exportable data set for Costa Rica.

Costa Rica has focused on social services, making education a priority. However, government expenditures are unsustainable relative to revenues, resulting in the ballooning public debt seen in Figure 8. In 2021, it is expected that 42% of the national budget will be required to cover debt and interest payments, where the bulk of the debt is from the banking sector and involves higher costs than foreign debt (Cuffe, 2021). The COVID-19 pandemic has made matters worse, and the nation has been negotiating with the International Monetary Fund for aid.

Figure 8. Costa Rica's Public Debt as a Percent of GDP



Graphs generated from data available through *TradingEconomics.com* which pulls from *Consejo Monetario CentroAmericano (2021)*.

Activities for Classrooms:

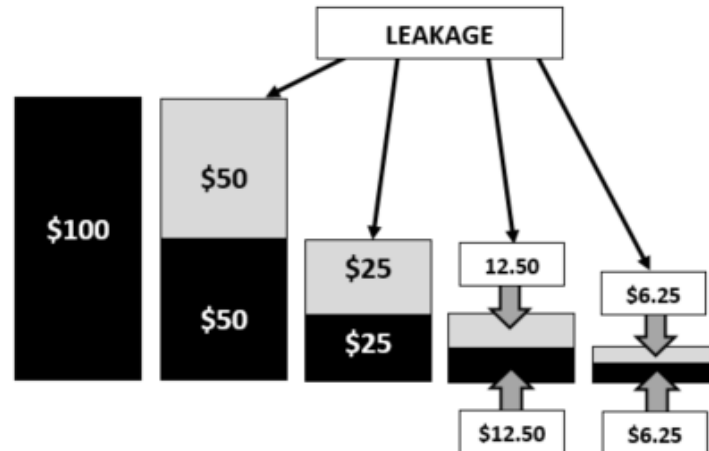
- Review GDP, the value of all final goods and services produced within a country for a given year.
 - Have students brainstorm about what kinds of activities might not be captured in GDP. For example, if the bald eagle goes extinct, does GDP change?
 - Have students think about activities that increase GDP, even though they might not increase well-being. For example, if more prisons are built, how does GDP change? If an earthquake destroys buildings that have to be reconstructed, how does GDP change? Are these measures that suggest increased well-being?
- Explore some alternative measures of progress, such as the Happy Planet Index, available at <http://happyplanetindex.org/>, Genuine Progress Indicator, discussed at <http://www.sustainwellbeing.net/gpi.html> or the Better Life Index available at <http://www.oecdbetterlifeindex.org/>.
 - Based on the discussions above, why do you think Costa Rica chooses to use alternative measures of progress and not only GDP?
 - Why do you think Costa Rica ranks so high in the Happy Planet Index?
- Lead a discussion of what is meant by “economic freedom” and how it differs from “political freedom.”
- Have students evaluate how economic freedom in Costa Rica compares to other Central American nations, using data from Heritage Foundation, <https://www.heritage.org/index/> and the Fraser Institute’s Economic Human Freedom Index, available at <https://www.fraserinstitute.org/studies/economic-freedom>. Students can also create graphs using data visualization tools.
- Have students use the Corruptions Perceptions Index, available at <https://www.transparency.org/en/cpi/2019/results>, to see how Costa Rica compares to its Central American and Caribbean counterparts.
- Help students use data visualization tools, available at <https://data.worldbank.org/country/CR>, to learn about other development indicators and how they have changed over time in Costa Rica.
- Use the World Bank’s development indicators to see how extreme poverty and poverty differ when comparing Costa Rica to other Central American nations.
- Have students discuss what might be contributing to Costa Rica’s debt crisis.
- More advanced classes can discuss the role of the IMF in helping Costa Rica and the austerity measures that are being considered.

6. Economic Multipliers and Turnover

Tourism in Costa Rica generated almost \$4 billion in receipts in 2018 (World Bank, 2020j). While there are obvious tourist destinations like Monteverde cloud forest or Manuel Antonio National Park, some rural areas are engaged. We visited a sustainable rural farm, a rural school, and an indigenous tribe, all examples of community-based tourism that help stimulate local economies. In these areas, the economic multiplier allows a \$100 expenditure to have more than a \$100 impact. As an example, suppose a tourist spends \$100 on souvenirs, generating a significant sale for a local business, or a “direct effect.” If the tourist selected an indigenous craft at the shop, there is an “indirect effect” since the purchase indirectly provides financial support for the indigenous artists whose works are in the store. Then, when the shop owner spends income in their community, there is an “induced effect.” The direct, indirect, and induced effects generate the total economic activity resulting from the initial tourist expenditure. This helps explain why the drastic fall in tourism during the COVID-19 pandemic had such devastating impacts across the globe.

Two important variables influence the total economic activity arising from tourist expenditures—*turnover* and *leakage*. The number of times money changes hands is *turnover*. The money that escapes the local economy is called *leakage*. If a shopkeeper takes their family to the city, money has leaked out of the local economy and no longer circulates there (but does in the city). Suppose that each time money changes hands in the local economy, 50% of the funds leak out. Figure 9 illustrates this pattern.

Figure 9. Illustrating 50% Leakage



In this case, the \$100 initial receipt (example above) would involve 13 turnovers for a maximum local economic impact of just under \$200 (ignoring fractions of pennies), as seen in Figure 10. In this case, the economic multiplier equals 2.

Figure 10. Circulation of Money in the Local Economy with 50% Leakage



However, if there were less leakage, there would be a greater economic impact associated with the initial \$100 expenditure. If the leakage were 30% (70% of funds remaining in the community), total economic impact would be over \$333. Clearly, a community's level of economic activity depends on the level of leakage.

Tourism creates economic opportunities (guides, hotels, restaurants, transportation, attractions) in Costa Rica, and the economic multiplier means a dollar spent by tourists creates more than a dollar of economic activity. But money can leak out of Costa Rica altogether. Tourists booking rooms in American hotels might be limiting the impact of their expenditures. Money continues to circulate when local workers are paid, but some profits might exit the country to Holiday Inn or Hilton's headquarters in the US. There is also leakage from Costa Rican

communities. When tourists book an ecolodge in a rural community, funds are injected into that remote area. However, locals must spend that money within the community to realize the greatest local economic impact. When they leave to make purchases elsewhere, that money no longer circulates through the economy. Rural agricultural communities in Costa Rica mostly exist without the continuous influx of tourism dollars. Thus, it is important for small villages to maintain local spending by residents, as significant leakage can cripple a rural economy. Our visit to the El Silencio cooperative illustrated to us this concern.

Activities for Classrooms:

- Ask students to use basic math to determine the multiplier when leakage levels change, for example, to 40% or 60%.
- Lead students in a discussion of what factors increase or decrease leakage.
- Have students evaluate the effect of leakage in their own community, even if not related to tourism. For example, does money leave the community when buying cars elsewhere?
- In small groups, have students discuss ways they can help create a larger economic impact as they plan their vacations in Costa Rica. What are strategies they can use to keep tourism dollars circulating in Costa Rica?
- Ask students to think about how the Coronavirus pandemic of 2020/2021 might have impacted Costa Rica and smaller villages, like El Silencio.

7. Village of El Silencio

The small village of El Silencio, near the western coast, is twenty minutes from the town of Quepos (about 22,000 residents) and well-known Manuel Antonio National Park. El Silencio sits on a banana plantation previously owned by United Fruit Company. When flooding destroyed the operation in 1955, United Fruit Company abandoned the property. Locals rented 600 hectares (1,482 acres) for a nominal annual fee of about 1 Colón per hectare (slightly over \$90 in 1970 exchange rates¹). In 1972, the land was purchased by the Costa Rican government and given to approximately 50 families who started a cooperative—an autonomous entity to promote agreed upon economic and social goals—in 1973. While tourists might eat at the cooperative's small café after rafting, the community does not generate much revenue from tourism. Incentivizing community members to “shop locally” keeps the money earned from tourists and incomes of locals circulating in the community's economy. The alternative currency strategy promotes local consumption for this reason.

El Silencio relies heavily on income from its palm oil fields; the project manager shared that 80% of revenues comes from palm oil nuts. For over two decades, the cooperative has operated a small, rustic lodge to attract ecotourists. The community has a small grocery store, a medical clinic (staffed two times a month), and schools. As we toured, we saw private enterprises, including a couple of front porch restaurants, a clothing store, and a tiny grocery (surprising given the law against free enterprise that competes with the cooperative). There are two churches, Evangelical and Catholic; the community owns and financially supports the latter.

By 2018, the cooperative had grown to approximately 150 families and 750 people. There is a membership process, and candidates of at least 18 years (to encourage schooling) are evaluated on their merits. Children or spouses of current members are evaluated in the same manner. Parents can bequeath homes and land to children, but if the heirs are not cooperative members, they must work outside the community. There is a 500,000 Colones fee to join the cooperative (about \$890 at the time of our visit), payable in cash or in work. Members are given land to build a home and cultivate crops (legal to sell inside and outside of the cooperative).

¹Historical exchange rates between the Costa Rica Colón and USD obtained at <https://fxtop.com/en/historical-currency-converter.php>.

Membership was described to us as being relatively flat.

Members must work for the cooperative, and one of the harder jobs is in the palm oil plantation. Others work on the farms (corn, beans, yucca, plantains, etc.), in the supermarket, in administrative offices, as mechanics, or in forestry (to name some). The cooperative has a focus on food security, and much of what is produced is used locally. The balance is sold outside of the village. Salaries are competitive, and workers get paid holidays and insurance. Year-end profits are shared, and locals mentioned “bonuses” that could be non-monetary, like livestock.

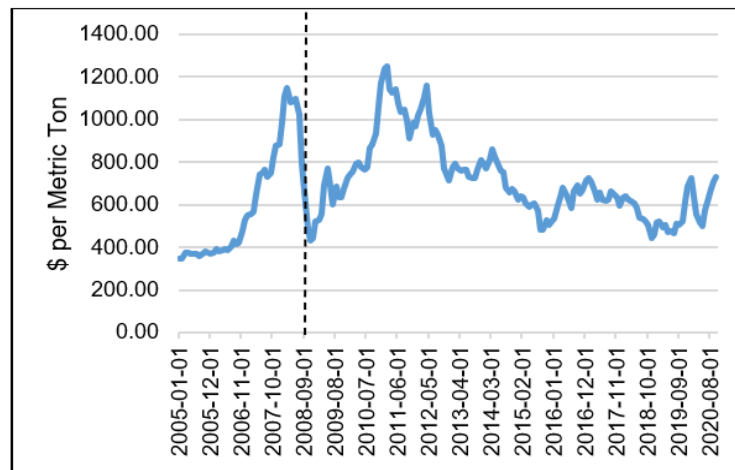
8. Alternative Currency in El Silencio

El Silencio is set apart from other rural communities by its alternative currency, which operates alongside the national currency. The use of an alternative currency (also called community or complementary currency) is unusual but not unique to El Silencio. In the twentieth century, especially during the Great Depression, community currency systems were somewhat common across the United States. In company towns—logging and lumbering, coal, fishing and fruit canneries, and railroad, for example—owners often issued “scrip-money,” advances on payment (often stamps, coupons, and eventually stamped metal tokens) that could be used for food and supplies at the company store (Timberlake, 1987).

Contemporary community currency systems, like El Silencio’s, emerged from a similar sense of isolation and need. In the Kid Chum district of Thailand, members of the Bia Bank can use Bia instead of or alongside the official currency, Baht. Some products are priced with a combination of Bia and Baht, since sellers must earn Baht in order to purchase needed supplies outside of the community, where Bia have no value. The program is designed to encourage the purchase of local products from local vendors (Powell, 2000). In Kenya, residents of Bangladesh began employing the Bangla-Pesa, Africa’s first alternative currency. The Bangla-Pesa can be used for a ride to the market or school fees, for example. Since the currency stays local, goods that might not otherwise be sold are often exchanged for Bangla-Pesas. The experiment has increased incomes in a community where many live on only a few dollars per day (Patinkin, 2014). Alternative currencies are not present in just the developing world. Brixton, England, is home of the Brixton Pound, and Berkshire County, Massachusetts, is home to BerkShares, which is touted as the most successful American alternative currency (Schwartz, 2009).

El Silencio implemented its alternative currency, the Udi, in 2008 when facing financial problems. Likely, falling palm oil prices, seen in Figure 11, contributed to its financial woes. Additionally, Walmart entered the Costa Rican market in 2005. If Maxi Pali (a Walmart brand) in nearby Quepos opened between 2005 and 2008, economic activity might have been siphoned off.

Figure 11. Global Oil Palm Prices per Metric Ton (2005-2020)



Graph generated from data downloaded from Federal Reserve Bank of St. Louis's FRED Data database, which originally came from International Monetary Fund (2016).

“Udi” stands for “unidad intercambio solidario” (*solidarity exchange unit*) and is useful only inside El Silencio, reducing leakage and keeping currency circulating locally. Two other cooperatives in Costa Rica use a version of the Udi—Coopevictoria in Grecia (an hour from the capital) and Coopebrisas in Zarcero (1.5 hours from the capital). The cooperatives were assisted by STRO, a Dutch social trade NGO specializing in microcredit.

Exhibit A. The Udi



The Udi is tied to Costa Rica's national currency, and 1 Udi equals 1 Colón. That keeps the community from having to administer monetary policy—they do not have to manage the money supply to maintain the desired value of the Udi. They also do not need to manage exchange rates between Udis and Colones—when the Colón appreciates/depreciates, the Udi does, too. However, the system only works if people use Udis, a decision left to individuals. Members decide how to split their paychecks between Udis and Colones; there is no minimum amount of Udis workers must accept. Older locals generally split their pay equally between the currencies, citing an interest in helping the community. They suggested that younger

generations do not behave similarly. Furthermore, it is easy to convert Udis to Colones at the grocery store and ecolodge with no commission or exchange loss.

The cooperative store, the size of a larger convenience store in the U.S., is central and easily accessible, but product variety is limited. Members receive a 5-10% discount when using Udis. Yet, we watched for an hour and observed all shoppers making purchases with Colones (discussed more below). We investigated shopping outside of El Silencio and learned Maxi Pali (Walmart's most economical brand) in Quepos was the destination of choice. The 25-minute ride was not prohibitive, as families in El Silencio have cars or motorcycles, and a bus travels there multiple times a day.

A key to the Udi's success is the cooperative's ability to compete with nearby Quepos. To compare prices, we created a consumption bundle and recorded prices in both locations. For accurate comparisons, the same brands and sizes were recorded (challenging with limited variety in the co-op). Since some products were on sale in Quepos, we recorded the *non-sale* price to capture the *smallest* price differential possible. When identical items were not found, the item was dropped, further restricting the size of the basket. The final basket reflected 27 items. The final column in Table 2 captures price differentials between the locations (co-op minus Quepos). Only one price (yellow) was lower in the cooperative, and only a few items (blue) were within a 10% price differential (recalling the 5 to 10% discount for using Udis in the co-op).

Table 2. Price Comparisons for a Consumer Basket (Cooperative vs. Quepos)

Brand and Item	Price Coop	Price Quepos	% Differential
Lizano Salsa-large	3220	2850	12.98
Lizano Salsa-small	1175	1030	14.08
La Lachera dulce de leche (can caramel)	1500	1020	47.06
Richly Maiz dulce (can sweet corn)	725	625	16.00
Ujarra's marmelada (guava jam)	920	785	17.20
Nevax Extra Mas (toilet paper)	2910	2130	36.62
Saba tampones (10 tampons)	2530	2130	18.78
Saba diarios (pads)	1740	1345	29.37
Kotex Noctura (pads)	1360	1050	29.52
Sedal (shampoo)	3625	2600	39.42
Xedex Multiaccion (laundry soap)	940	790	18.99
Dos Pinos néctar (mango, pear)	885	755	17.22
Coca Cola/Fresca (3 liter)	1750	1625	7.69
Pillsbury cake mix (vanilla)	2000	1700	17.65
Manza Te Digete (apple tea)	1315	1250	5.20
Rapadita tortillas	575	525	9.52
Rumba Maranon (caramel cashews)	750	825	-9.09
Rice (per kilo-same grade)	1130	1115	1.35
Natura's carne salsita (meat sauce)	410	355	15.49
Natura's Pasta de Tomate (tomato sauce)	450	380	18.42
Banquete Ketchup	1360	1065	27.70

Lizano frijoles rojos-small (red beans)	670	560	19.64
Roma Pasta (angel hair)	750	650	15.38
Sardimar atun en aceite-silver (tuna fish in oil)	1600	1380	15.94
Sardimar atun en aceite-black (tuna fish in oil)	1170	1000	17.00
Colgate Total	2110	1830	15.30
Palmolive Suavidad Radiante (soap)	1635	1075	52.09
TOTAL	39205	29595	9610

Prices are almost always lower in Quepos, with the cost of the basket being 32.4% higher in the cooperative, *before* considering sale prices. Maxi Pali also has school supplies, clothing, home goods, electronics, etc. not available in the cooperative. Lower prices and greater variety give cooperative members an incentive to leave the village, even with transportation costs. It may also discourage locals from accepting a portion of their pay in Udis, possibly explaining why we did not see transactions with Udis. Unfortunately, this decreases the economic impact of the Udi and illustrates the struggles faced by rural communities as the more populated areas of Costa Rica develop.

9. Concerns with the Udi

Our investigation revealed some shortcomings of the alternative currency program. First, use of Udis was optional. Cooperative members could be paid solely in national currency, although they forego the discount. This likely means greater leakage. The demand for Udis appears to be related to people's concern for local development, something less important to younger residents who discussed leaving. Second, it is possibly too easy to convert Udis to Colones, as there is no penalty. A low penalty affords members access to Colones for emergencies—a trip to Quepos' emergency clinic, for example. If the penalty is too high, locals might choose to operate only in Colones, defeating the purpose of the alternative currency. Additional thought is needed in this aspect of the program. Third, discounts in the cooperative store encourage locals to shop at home with Udis. However, the 5-10% discount does not put prices in range of those in Quepos. For larger families with larger expenditures, the financial penalty can be substantial. The co-op manager agreed that these were limitations of the Udi program that needed to be revisited.

Activities for Classrooms:

- Have students discuss how life might be different in El Silencio compared to their lives.
- Have students discuss why residents of El Silencio might not benefit from tourism and from FDI to the same extent as those living in Costa Rican cities.
- Ask students to speculate on why younger members of the co-op might have a different attitude about the Udi program than older members.
- Have students discuss what variables might impact the success of the Udi in El Silencio. For example, does distance to the nearest town matter? Does availability of transportation matter?
- Have students brainstorm about how they might change the rules to make the Udi program more effective.
 - Should workers be required to take part of their earnings in Udis?
 - Should membership in the cooperative come with requirements to participate in the Udi program?
 - Should residents pay a penalty when exchanging Udis to Colones?

- What ideas might reduce leakage and increase the multiplier in El Silencio?
- Have students discuss the questions they would ask residents of El Silencio to determine why they leave the co-op to shop and what could be done to make shopping more attractive in the village.
- Have students create a persuasive marketing piece (commercial, radio ad, brochure, flyer, letter to editor) promoting the Udi and the importance of the program for the cooperative's economy.
- Have students discuss why El Silencio might have opted to create a 1 to 1 exchange rate between the Udi and the Colón.
- Have students compare Berkshire County, Massachusetts (home of Berkshares) or Ithica, New York (home of Ithacash) to El Silencio.
 - What differences and similarities do you find?
 - Would an alternative currency work better in one place versus the other? What are the reasons for this view?
- Have students discuss whether an alternative currency could be successful in their own community.

10. Conclusion

Costa Rica's warm, safe, and romantic environment makes it an ideal vacation destination, especially for ecotourism, and the country benefits from the revenue. After suspending the military in 1948, the country channeled money into social services, education, and the environment, creating greater human capital, a more diversified economy, and a nation-wide focus on sustainability. The country has seen increasing GDP per capita, increasing literacy rates, and extreme poverty has been almost eradicated. At present, half of the country is forested after massive efforts to reforest and establish reserves. However, the nation still struggles with poverty, inequality, and ballooning public debt.

Costa Rica's success story is not universal. Isolated towns and landlocked areas, especially communities less impacted by tourism, find access to Costa Rica's resources and opportunities more challenging. To study Costa Rica is to observe a living model of how progressive social and economic decisions can have positive and long-term effects for a nation. Even rural, less developed areas reveal a similar commitment to the environment, but the economic benefits of a diversifying economy do not trickle down to the same degree. Our visit to the rural cooperative of El Silencio and its alternative currency experiment highlighted this juxtaposition.

We provide here a unit that puts economic ideas in a real-world context while also offering young people an opportunity to learn about a country quite different from their own. Furthermore, students can refine critical thinking skills through problem-solving opportunities that engage them in issues without specific or singular solutions. Discussion questions and extension activities are offered for instructors who might wish to expand on content.

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