

COSTA RICA

Back on the international stage



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Costa Rica: A small country with a big voice

President Rodrigo Chaves Robles reveals why the Central American nation is having an increasingly outsized impact on the world

You were elected as the 49th president of Costa Rica in April 2022. During your successful election campaign, you stated that you wanted Costa Rica to join Mexico, Colombia, Chile and Peru in the Pacific Alliance economic bloc. In July, you initiated the membership process, which should be completed this year. For a nation with a population of only around 5 million, Costa Rica is already a highly influential presence on the world stage. Why is that and how is its international positioning changing under your government?



Rodrigo Chaves Robles
President

We are a small nation with a big voice in the international arena and that will remain the case. We are one of the shining lights in the Americas: economically open and, politically, we are a country in the middle, which shares values with places such as the U.S., the European Union, the Dominican Republic and Panama.

Costa Rica is a country of human rights. Our role is to continue being a nation that shows we live by our international commitments, we have rule of law and democracy, and we're a generous country when treating human calamities. For example, we are currently dealing with a crisis of immigration from Colombia of Venezuelans going into the U.S. We are taking that very seriously, and provide refugees and illegal immigrants with education and health services at great cost.

Costa Rica has a heritage of absolute commitment to its natural environment as well. We are the only country in the tropical world that has reversed deforestation, going from 24 percent of our lands being covered in forest to around 60 percent. This is also the only nation where all forms of animal trapping and hunting are forbidden and enforced. There is no perfect country, but we're getting as close as we can to it.

Under its new government, Costa Rica has returned to the world stage with renewed energy and enthusiasm. The country already has free trade agreements (FTAs) that cover about 75 percent of global gross domestic product (GDP) and we are pushing hard for more agreements in order to take this to a much higher percentage. In December, we successfully concluded a bilateral FTA with Ecuador and I'm very optimistic about our membership of the Pacific Alliance. We've also applied to join the Comprehensive and Progressive Agreement for Trans-Pacific Partnership, a trading bloc of 11 countries that represent an important portion of the world's GDP.



99% of Costa Rica's electricity comes from renewable sources

In May 2022, when you were sworn in as president for a period of four years, you promised to introduce historic changes within Costa Rica. What are some of the most significant measures your administration has implemented so far?

Putting modesty aside, we're working across an entire waterfront of issues with a level of ambition and effectiveness that is pretty unique in our hemisphere and, frankly, is seen in few places globally.

For example, we're eliminating all the bottlenecks to doing business that we can. Our Chambers of Commerce, Industry and Trade identified 155 bottlenecks and we have implemented a program to remove all of those within six months. This is progressing quickly, which is very rewarding. We've restructured our electricity utility, reduced electricity tariffs by 30 percent and another part of our structural reforms that has been implemented is the breaking up of internal monopolies in rice production, medicine and the pharmaceutical industry.

We're reinvesting in improving our infrastructure as well and I've ordered the release of 5G telecommunication frequencies to make Costa Rica one of the first countries in Latin America to have a fully deployed 5G network. Overall, the Costa Rican government is working very hard to strengthen the competitiveness of our industry and our people.

"Costa Rica is a country of human rights. Our role is to continue being a nation that shows we live by our international commitments, we have rule of law and democracy, and we're a generous country when treating human calamities."

Rodrigo Chaves Robles, President

Costa Rica's economy has performed impressively over the last decade. It achieved more than 3 percent growth in its GDP in 2022 and the Organization for Economic Cooperation and Development (OECD) has forecast a further 2.6 percent expansion this year. Having said that, in 2021 the country received a \$1.78 billion three-year loan from the International Monetary Fund (IMF) in order to stabilize its public debt after the shock of COVID, with the goal of reaching a primary surplus by 2023. How robust is the Costa Rican economy and are you meeting the terms of the IMF's loan program?

I believe Costa Rica's economy is very resilient and it has shown that resilience. We have a vibrant tourism industry that is recovering from the pandemic and bringing in foreign exchange, plus we're increasing



Intel has recently invested nearly \$1 billion in Costa Rica

our exports of value-added high-tech products from our free trade zones. Thanks to the government's reforms, we're building up the private sector's confidence and our internal projections for growth this year are substantially more optimistic than the OECD's forecast of 2.6 percent, which is very conservative. Of course, we have problems with inflation, but Costa Rica is doing well in comparison to most countries worldwide. Provided that the world remains in a stable place, 2023 is going to be a very good year for Costa Rica and investors in Costa Rica.

Our macroeconomic foundations are also being judged as appropriate by the international community. As an illustration, in a note to investors the Bank of America described our budget for 2023 as heroic. And in our IMF program, we have overdelivered on all quantitative targets and all benchmarks, further ensuring the sustainability of our economy.

In addition to the international community, my administration has received an unprecedented level of positive support from the Costa Rican people, which gives us the legitimacy to push for more structural reforms.

When it comes to exports, Costa Rica might be best known for its top-quality agricultural products like bananas and coffee. In fact, its largest export sector is medical devices and hundreds of multinationals involved in tech-based manufacturing operate in the country, many of them coming from the U.S. How important is the U.S. as an investment and trade partner for Costa Rica and what are some new opportunities opening up for investors from that country?

Costa Rica and the U.S. have been strong allies since 1854. It is our biggest trading partner and our main source of tourism, which is crucial to our country. We have a very close relationship and proximity in location, time zone and values.

About 10 percent of our GDP comes from high-tech biomedical products and Costa Rica is one of the most advanced technology centers in the world for microchips in those products. We are, therefore, very well placed to take advantage of the rethinking in the U.S. about its supply chains for microprocessors, which were being produced in more distant countries where the security and interests of the U.S. may not be best served.

2022's Creating Helpful Incentives to Produce Semiconductors and Science (CHIPS) Act is the most important U.S. policy statement regarding national security and the supply of key inputs into the American technology industry since the 1940s and we've been in discussions with the U.S. government at the highest levels to position Costa Rica as one of the key players for friendshoring activities in this area. As a matter of fact,



Costa Rica is emerging as a key player in technology nearshoring

Intel recently expanded its chip production capacity in Costa Rica, which is a significant development.

Additionally, we are already a big hub for shared services and our deployment of 5G will be attractive to investors in those sectors, there's great potential for adding value in our food processing industry and we are seeing increasing investment in tourism. Costa Rica is one of the safest countries in our hemisphere for visitors, if not the safest, and it has a well-integrated nature- and adventure-tourism offering.

Importantly for investors, we have an incredible free trade zone system, and whoever wants to invest in Costa Rica can be assured that they will be greeted with open arms and won't face red tape. All are welcome to visit and enjoy our country's beauty and our excellent investment opportunities.

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BANCO NACIONAL

A role model for sustainability

Marco Acuña Mora, Executive President, Grupo ICE, explains how Costa Rica created a robust 99%-renewable electricity system

The publically owned Grupo ICE supplies Costa Rica with almost 78 percent of its electricity and is also the market leader in telecommunication services. In 2022, 99.25 percent of the Costa Rica's electricity came from renewable sources and, despite the global energy crisis, the sector remained stable and prices dropped. How was this achieved?

Costa Rica has been investing in renewable energy for 70 years, so its electricity matrix is very strong in renewables. Hydropower is the main source of our electricity, followed by wind, geothermal, solar and biomass—with that mix, more than 99 percent of the country's electricity can be reliably generated from renewables. Our electricity is produced at a fixed cost, because the sources are basically free and not linked to global market fluctuations in fossil fuels, and Costa Rica's independence from fossil fuels in electricity production means that we can control and manage electricity tariffs in a better way than countries that have greater dependency on fossil fuels.

In fact, we have enough natural resources to satisfy domestic demand and to export electricity to Central America. In 2021 and 2022, we exported 10 percent of our production to other countries and those exports generate income that we distribute to our Costa Rican customers in the form of lower tariffs. Even though most of the world has been experiencing skyrocketing prices for power, we were able to reduce our electricity tariffs by more than 25 percent last year. That benefits not only households but also businesses, including exporters as it gives them an advantage over competitors based in countries with higher electricity costs.

ICE operates a strong network of 40 electricity generation plants, plus state-of-the-art transmission and distribution systems. Is the group intending to make any further investments in this infrastructure in the near future?

Right now, we're focusing on ensuring that ICE increases the reliability of the power system for the coming years in order to guarantee a platform that can handle an expanding amount of renewable energy—our systems need to incorporate more renewables, because the country's big goal is to electrify the economy. ICE is currently planning the investments required to make that happen on the generation and demand sides, as well as in our transmission and distribution systems. Electrification of the economy will only be possible if we boost our efficiency and invest in the digitalization of our processes and operations.

Another big goal is to improve electricity services in rural regions outside of Costa Rica's Central Valley to help attract investment to those areas



Marco Acuña Mora
Executive President
Grupo ICE



Wind is one of Grupo ICE's five renewable power sources

and to create more opportunities for the people and companies based in them.

We also have plans for expanding our capacity for cross-border electricity transmission in the northern parts of the country and connecting to Nicaragua. We're investing in our own country and in regional projects through Empresa Proprietaria de la Red (EPR), a company owned by Central American countries that oversees the interconnection of six national power grids. In addition, ICE is running a pilot project involving power storage at the moment that we are considering extending.

Following the German government's donation of some electric buses to ICE, in November 2022 the group announced it was developing the country's first dedicated route for buses powered by the grid. Can you tell us more about the group's efforts to encourage the spread of electromobility and to electrify the wider economy?

We received the buses two years ago and lent them to public transport operators for testing on urban routes. The feedback was amazing: people loved them and they resulted in an energy cost reduction of over 80 percent in comparison to buses powered by fossil fuels. Because their operating expenses are so much lower, other operators are now interested in using them. We're working on a business model for leasing electric buses

"We were able to reduce our electricity tariffs by more than 25 percent last year. That benefits not only households but also businesses, including exporters."

Marco Acuña Mora, Executive President, Grupo ICE

to operators and we're trying to raise funds for buying more vehicles from multilateral institutions.

That is what ICE does: we introduce technology for the use of the country. In 2018, for instance, when electric cars were starting to be adopted around the world, ICE bought 100 of them to give people confidence in the technology and today that market is moving swiftly. Similarly, traditional boilers consume a lot of fossil fuel and so we've been very proactive in bringing various electric boiler manufacturers to the country

and linking them to business owners and public institutions. Overall, ICE promotes technology change, but those technologies have to be aligned with renewable energy use, sustainability and social inclusion, and you can see that approach in all of ICE's activities.

ICE is also at the forefront of advancing fixed and mobile communication technologies in Costa Rica. For example, as a result of its continued development of satellite platforms, submarine cables and fiber optics, the group's kölbi mobile network—which boasts a market share of around 41 percent—provides users with the highest coverage and speeds in the country, according to the national telecoms agency Sutel. In 2022, ICE received a \$300-million line of credit from the U.S.'s export bank EXIM that will be spent on 5G implementation. Why are you making this substantial investment?

Costa Rica's telecommunications market is a rare one, in that the public telecom company remains dominant, even though the market was opened up over a decade ago. We were the first with 4G and fiber optics and we want to be first with 5G deployment. We need to make sure that the country has the best telecom network in the region because that's vital for Costa Rica's competitiveness: you don't have an advantage if you don't have great connectivity to the rest of the world.

In this area, ICE has an end-to-end vision for giving the country a competitive edge to attract foreign investment, but also to reduce the country's digital access gap in indigenous communities, rural areas and remote schools, businesses, industries and agricultural enterprises. We're aiming to release a tender for 5G technology by June, select a vendor by the end of the year and general deployment for the public should begin in 2024, although one of our goals is to provide private 5G networks for businesses this year.

Costa Rica has an international reputation for embracing game-changing sustainable technologies before others, particularly in the electricity sector. How has it become a leader in this area and could its model be adopted by other countries?

Visionary people began to develop our model many decades ago and protecting our natural environment is in the Costa Rican DNA, so it's simple for us to convince our people that renewable energy solutions are the best way forward. For me, culture and education are key. From a very young age, our children are witnesses to renewable energy usage and the protection of forests, rivers, seas and wildlife. These things are ingrained in our population, which provides a platform for the easy implementation of public policies that will positively impact sustainability.

I think the Costa Rican model is replicable by other nations—however, it's not just a matter of public policy implementation, they have to include culture and education to generate the kind of results we do. If a population doesn't care about nature and the environment, it's very difficult to expect people and businesses to follow green public policies.

Our example provides value for other countries, as we have demonstrated that we can achieve results in a cost-effective way and our ability to reduce our electricity prices, while other countries are faced with huge energy bills, is helping our economy significantly. We're showing that the energy transition is possible, but you need a clear vision, education and funding to make it happen. Once countries have those things in place and once they start to create value, their governments will recognize that it's worth it.



ICE is a world leader in geothermal research and development

Transforming Costa Rica's wider energy mix

While 99 percent of the nation's electricity comes from renewables, 70 percent of its total energy needs are met by hydrocarbons, which are imported and distributed by RECOPE, Costa Rica's largest company. "We're responsible for guaranteeing energy security and ensuring fuel is available at the best possible price. We're a worldwide example of how public companies can contribute the development of small economies," says its president, Juan Manuel Quesada Espinoza. RECOPE's activities are currently restricted by law to oil and its derivatives. However, the new government is supportive of expanding its remit toward cleaner energies, he says: "Our focus is on areas like natural gas, bio-fuels, replacing gasoline with ethanol and there are proposals for us to participate in green hydrogen. RECOPE has a very important role to play in the energy transition."

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Economic resilience and financial inclusion

Social and environmental development go hand in hand with sustainable economic growth

Costa Rica's economy grew by over 3 percent last year and a further 3-3.5 percent increase in 2023 is forecast by Banco Nacional de Costa Rica (BNCR), the country's largest universal bank and one of its main banking references for international businesses and development agencies.

"Much of the growth can be attributed to our healthy export sector, with a large share of that being medical devices, as well as tourism, which has recovered well from the pandemic. Those industries will continue to be engines for our economy," says Bernardo Alfaro, the bank's CEO. As he notes: "In 2023, we expect our local currency, the colon, to remain stable in terms of both interest and exchange rates."

Named Costa Rica's Bank of the Year in 2022 by The Banker magazine, the state-owned but independently managed BNCR is responsible for about 19 percent of banking loans made in the country and is trusted with nearly 23 percent of deposits. Over the years, it has contributed significantly to the nation, not least by advancing micro, small and medium-sized enterprises (MSMEs). "We have a strong base of around 200,000 MSME customers, which make up an important part of our



Half of BNCR's senior management team are female

economy. Supporting the growth of MSMEs by offering them better financial services will always be BNCR's main objective," Alfaro states.

In addition to encouraging sustainable economic development, the bank's dedication to ensuring it makes positive environmental and social impacts has positioned it as a benchmark for sustainable finance in Central America. According to the CEO: "We're an integral part of Costa Rica's green achievements. For example, we're involved in the funding of all renewable energy projects and we were the first bank in the region to issue a green bond in 2016." Further illustrations of its commitment to the fight against climate change include the fact that its investment fund management subsidiary BN Fondos issued the country's first green investment fund last year, while the bank's portfolio of services includes products offering preferential conditions for loans related to eco-friendly housing, the purchase of items such as solar panels and electric vehicles, sustainable MSME business initiatives and carbon offsetting.

One way BNCR has added value to society is by becoming a leader in technological innovation. "Costa Rica ranks highly for financial inclusion and we've been a major influence on that. Our customers can fulfill any transaction through our cell-phone app and internet banking system, for instance. We're also focused on social impact programs to help impoverished communities and strong in financial services for women, who represent over 50 percent of our customers," Alfaro reveals. Evidence of this came in 2022, when BNCR issued the country's first social bond with \$377 million in funding from its own resources and those of international partners like IDB Invest, FinDev Canada, the French Development Agency and the European Union. This will mainly be used to finance sustainable projects from female-led MSMEs.

To further drive Costa Rica toward a sustainable future, the bank has developed an environmental and social risks analysis system to inform its lending decisions, he explains: "At the moment, we analyze requests for loans of over \$1 million and we will scale this down to cover our whole portfolio. If a project risks negative impacts, the loan isn't approved, which has persuaded many clients to implement sustainable practices in order to access funding from us."



Bernardo Alfaro
CEO
Banco Nacional de Costa Rica

Costa Rica: People, planet, prosperity

 7.4% of GDP spent on education	 41% of exports are services, against an OECD average of 26%
 59% covered by forests 1st tropical country to reverse deforestation	 4,100 Costa Rican products exported to 151 countries
 26% land protected in national parks and reserves	 \$5.2 billion generated in medtech exports in 2021, 33% increase from 2020
 58 trade partners including the U.S., China, Europe, Singapore and South Korea, with preferential access to 2/3rds of global GDP	

Source: CINDE

Talent is the #1 advantage

The open economy's skilled, multilingual workforce attracts tech-based multinationals

"In the last 40 years, Costa Rica has transformed from an internally focused, agricultural economy into a very open, high-tech one that exports a vast diversity of sophisticated products and services," states Eric Scharf, president of the country's investment promotion agency CINDE.

Central to this transition have been the tech-based multinationals that have flooded into Costa Rica. Over 400 of them are operating in the country at the moment and their footprint is expanding: in just 2021, for instance, international investors including Bayer, Amazon and Intel announced a record-breaking 103 new projects, 63 percent of them connected to technology, life sciences, business and professional services. Today, precision and medical equipment is Costa Rica's biggest export sector, contributing around 34 percent of all revenues from exported goods. "We've been very successful at attracting investors in medical devices, we're also attracting companies in other health and life science industries, and we aim to go stronger in pharmaceuticals. Our technology and digital services sectors have accelerated as well and we're working to become a regional hub for cybersecurity. IBM has its largest cybersecurity department in Costa Rica and others in the industry, such as Akamai, are now here," he says.

According to Scharf, "Costa Rica's success as an investment destination revolves around 3 Ps: people, planet and prosperity. Of those, the number-one reason companies invest in Costa Rica is its people. Our talent is the most competitive advantage the country has and we work closely with education

"Costa Rica's success as an investment destination revolves around 3 Ps: people, planet and prosperity."

Eric Scharf, President, CINDE



Eric Scharf
President, CINDE

and training institutions to ensure Costa Rica's educational offer connects with the technical and soft skills companies are demanding." The second trigger for investors is the commitment to sustainability of a nation that is almost 60 percent covered in tropical forests and gets 99 percent of its electricity from renewables. "Firms are increasingly coming for our plug-and-play clean-energy solution," he confirms, before elaborating on the third key advantage, prosperity: "Companies that operate here might be global competitors, but in Costa Rica they collaborate in a cooperative environment with government and academia to improve our competitive ecosystem and create prosperity."

Beyond the 3Ps, there are other persuasive reasons for investors to choose Costa Rica. For example, it offers enticing tax incentives to those that settle



Precision and medical equipment account for 34% of exports

in one of over 30 free trade zones. Exports and imports are also preferentially facilitated through free trade agreements covering around 60 countries worldwide, including all of the Americas, Europe, China, Singapore and South Korea. Then there is the nation's political, economic and social stability, adherence to the rule of law and, as Scharf highlights, its location: "Costa Rica is not a cheap country, but for many companies cost is not the main decision-making element when deciding on a destination. The notion of nearshoring, for instance, has become important due to global supply chain issues, and we're close to the US, in the middle of the Americas and near Europe, which is a strategic advantage. Friendshoring will definitely carry on growing in Costa Rica."

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Nearshoring is a great opportunity for Costa Rica

Ramón J. Aguilar Revelo, CEO, GBM, illustrates why the country is a regional leader in IT and how it is building up the sector's talent pool

Costa Rican information and communication technology (ICT) services amassed export revenues of \$1.5 billion in 2021, almost 10 percent more than the previous year, according to the World Bank. The country is Latin America's top exporter of ICT services and the sector's determination to increasingly add value is consolidating that position. The best illustration of this is GBM, Costa Rica's largest information technology (IT) company, which serves nine Central American nations and has an office in Miami. Could you describe how the company has evolved?

When GBM was created in 1991 we worked only with IBM, with which we still have an exclusive distribution alliance. Over time, we've formed strategic partnerships with more world-class companies, such as Cisco, Lenovo, SAP and Microsoft. Originally, we sold mainly hardware, but today we're a hardware and services vendor and a consulting firm merged into one with a lot of added value. We develop end-to-end IT processes for companies; from the assessment of their requirements and objectives, the solutions architecture, to the execution and management of all their IT needs. More than half of our revenue comes from services, in which we're the leader in Central America and the Caribbean. For example, we've established a network of 11 data centers around the region, our outsourcing services unit is almost doubling in size every year and we've just opened a software factory in Colombia that already employs around 300 programmers. Right now, many of our engagements with customers relate to cloud migration and cybersecurity—as our clients move toward the cloud, they're turning to us for better, cheaper and more secure processes.

What does the future hold for Costa Rica's IT sector?

The big opportunity is nearshoring; there's huge potential to capture a large share of the IT services and manufacturing that the U.S. used to have in China or Northern Europe. Costa Rica, alongside Panama and Colombia, is well positioned to understand U.S. market needs. There are a lot of U.S. companies already in Costa Rica and they'll keep coming, as it has an excellent reputation.

Does the country face any hurdles in exploiting that opportunity?

Costa Rica is already a great country to hire or contract services in, therefore we need more IT service companies like GBM. We must also make an effort to produce all the IT manpower that U.S. corporations are going to be looking for; I think we're producing half of what the market will need at the moment. In particular, we need to train more programmers. This represents an opportunity to help the economy and deprived young people: you can take a young person, teach them English and how to program and, in 1.5 years or



Ramón J. Aguilar Revelo, CEO, GBM

less, they can start a career in IT and turn their future around. There are about 3,000 tech labs in our schools today—so children have exposure to technology at a very young age here. All we have to do is teach them English and programming. To support this initiative, GBM is working with universities and technical colleges to produce more programmers and we're looking to engage with the government about launching a countrywide training scheme.

How else is GBM adding value to Costa Rica's economy?

In addition to supporting growth in nearshoring, we're helping companies in all industries—from banking to government institutions, manufacturing, distribution and more—through digital transformation. GBM aims to be a real partner for our customers and to become their IT department, so they can focus on their core businesses, and one of our differentiators is the level of advice and support we provide.

GBM garnered numerous awards in 2022, including being named Cisco's Central American partner of the year. Can the company carry on growing while also retaining its high standards?

GBM is becoming a very large company and we're continually expanding our services, but we're trying to grow in an intelligent way. For instance, we've

“You can take a young person, teach them English and how to program and, in 1.5 years or less, they can start a career in IT and turn their future around.”

Ramón J. Aguilar Revelo, CEO, GBM

opened a cybersecurity center in Guatemala from which we can monitor security for clients in all the countries we serve. Cybersecurity is about having the right architecture, processes, training and someone monitoring your security 24/7, and we've invested a lot in technology and people to ensure we offer that. In all our activities, we invest in processes and certifications, because when you're running somebody else's IT systems, you have to be perfect. You cannot fail. We're a company that evolves hand in hand with our partners to meet our clients' needs and industry trends. That, coupled with our principle of continuous staff training, allows us to maintain excellence in the delivery and support of every solution we provide. What makes GBM and Costa Rica really stand out is the quality of the workforce: the dedication, desire for improvement and passion of our people is an incomparable advantage in the market.

Shaping the labor force of tomorrow

For over 70 years, Costa Rica's public universities have been vital engines for national economic development and social mobility

In the 1940s, Costa Rica became the first country in the world to abolish its army, having decided to redirect its budget toward social development.

A key platform of this policy, which is still in force today, was investment in higher education. “The creation of public universities with constitutionally guaranteed resources has made the country highly competitive in the quality of its professional workforce and attracting investment to the country, plus it has enabled multiple social projects that have raised the population's wellbeing. Our universities stand out in international rankings and are particularly strong in research, innovation and their link with development,” says Dr. Gustavo Gutiérrez Espeleta, rector of the University of Costa Rica (UCR), the oldest and largest of the nation's five public universities, which is recognized as being one of the best higher education institutions in Latin America. “UCR is an autonomous, democratic institution of higher education and culture that is governed jointly by its staff and students. We work with a humanist vision, with a focus on human rights, inclusion, academic freedom, freedom of expression and a commitment to the environment,” he states.

Through its main campus in San José plus six regional campuses that are spread across the country, UCR provides over 45,000 students with a wide range of degree, post-graduate, diploma and certificate courses, which are designed to craft the skills the labor market needs. Connections between its programs and the private sector are robust, notes Gutiérrez: “Each academic unit maintains close relationships with related industries and we monitor our graduates' job placements and evolving skill requirements, which are taken into account when establishing new programs in different regions of the country, so that our offer favors social mobility and national economic development.”

The university's 52 research units and over 1,700 researchers work with the private sector as well, he adds: “By 2022, 314 trademarks had been registered after linking our innovation with industry. For instance, knowledge generated in our laboratories has been translated into products that are strengthening our agricultural sector by helping it to use fewer chemicals.” As well as advancing traditional industries, UCR is developing skills for emerging tech-based sectors and 46 percent of its students are currently studying programs related to science, technology, engineering and math. “We promote technical knowledge for graduates to be able to work in these areas but, beyond that, UCR's training creates ethical professionals with the capacity for analysis, dialogue, reasoning and many other tools that are essential for any industry,” declares Gutiérrez.

Another common strand running through all programs is sustainability, he reveals: “UCR has been at the vanguard in incorporating adaptation to and mitigation of the climate crisis in its work and is supporting other institutions and the private sector to strengthen their efforts toward sustainability.”



UCR receives \$540 million a year in state funding

Internationalization is an additional pillar of UCR's ethos and it currently has 414 academic cooperation agreements with universities around the world. Even so, the rector sees increasing ties with institutions and students from all continents as a priority: “I would like to invite students, companies that want to invest in innovation in Central America and universities looking for opportunities for academic and research collaboration to talk to us. Costa Rica and UCR specifically are always well disposed to working with international partners.”



Dr. Gustavo Gutiérrez Espeleta
Rector, University of Costa Rica

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People and planet come first in agriculture

The agricultural sector is embracing science and technology to support farmers and workers, as well as to protect the environment

Thanks to global awareness of the quality in Costa Rica's diverse agricultural output, it accounts for around a quarter of the country's exported goods and 5 percent of its gross domestic product (GDP).

112 worldwide destinations currently consume over 450 different crops harvested in Costa Rica. Within that bounty, it is the world's top exporter of pineapples and the third biggest for bananas, while a myriad of other exotic fruits, plants, flowers and vegetables are also in high demand, as is the nation's fine Arabica coffee.



Jorge Sauma Aguilar
CEO, CORBANA

The sector has taken huge strides toward adding positive, inclusive value to society and reducing its environmental footprint. At the forefront of these endeavors are the producers of the country's bananas, the only ones in Latin America to have been awarded Geographical Indication status by the European Union (EU) in recognition of their sustainability standards. "Costa Rica's bananas are 'pura vida', the best in the world. For us, how our bananas look and taste is important, but it's more important that their production respects workers' welfare and the environment," asserts Jorge Sauma Aguilar, CEO of La Corporación Bananera Nacional (CORBANA), a public-private alliance between the government, banks and farmers that acts as the national regulatory body for the fruit and is tasked with promoting and ensuring their quality.

CORBANA has been contributing to the development and strengthening of the sector by supplying technical and scientific advice, market data and loans to farmers for five decades. As a result of the improvements it has encouraged, bananas represent about 6 percent of Costa Rica's total exports, with more than 2 million metric tons being shipped out every year, mainly to the U.S. and the EU, Sauma states: "They are the nation's main agricultural export income generator, bringing in \$1 billion annually. More significantly, over 150,000 Costa Ricans depend on banana agro-export activity and our industry is based in parts of the country that suffer most from poverty and lack of employment opportunities. For that reason, in Costa Rica the banana sector puts our workers first and they receive the highest salaries. They are the foundation of the industry."

The sector's second priority is the environment and it started establishing and monitoring standards for sustainable banana production as early as 1992. Among other achievements, today all farms recycle plastic, solid waste is properly disposed off and over 12,000 hectares of the land allocated to plantations are protected as forests. "We've gone through a deep transformation in the past 20 years to make our activities greener and gain environmental certifications.



More than 150,000 Costa Ricans depend on the banana industry

63 percent of our farms have already been certified as carbon neutral, while 100 percent have at least one certification from international bodies like ISO and the Rainforest Alliance," he says.

CORBANA's world-class research institute plays a crucial role in the sector's adoption of innovative environmentally friendly techniques, Sauma explains: "An important facet of our research is how to reduce agrochemical usage while remaining competitive—we're trying to combat pests and diseases using natural methods, such as biological control and developing resistant varieties. At the same time, an additional target of our research is increasing productivity." CORBANA has research collaboration agreements with numerous universities, other research organizations and banana industry groups around the world, he adds: "We're very focused on working together as part of alliances. The banana sector is crucial, not only in Costa Rica but globally, with 500 million people in total depending either directly or indirectly on bananas for export or consumption. Through our work, we aim to help protect the welfare of all those people."

"How our bananas look and taste is important, but it's more important that their production respects workers' welfare and the environment."

Jorge Sauma Aguilar, CEO, CORBANA

A further illustration of the country's commitment to social welfare is coffee, the source of over 4 percent of GDP. In 1961, Costa Rica introduced a law that is still globally unique, which has created an equitable balance in the relationship between coffee mills, exporters and producers, who are mainly small-scale farmers. This is administered by Instituto del Café de Costa Rica (ICAFFE), which also engages in research, knowledge transfer and promotion. Like CORBANA, ICAFFE has turned to science and technology to boost economic, environmental and social sustainability. For instance, it is helping farmers to take up new technologies for better productivity and it has developed a mobile and web-based app that makes every bag of coffee fully and digitally traceable. The sector is also implementing the world's first agricultural nationally appropriate mitigation actions to lower greenhouse gas emissions.

When it comes to the welfare of workers, perhaps the most impressive fact is that over 79 percent of export income goes straight to the grower. As Santiago Vidal Tovar, chief operating officer of startup Paya Coffee says: "While you pay a certain price for Costa Rican coffee, you know you are helping a farmer, their family and a whole region." The country has eight coffee regions, each delivering brews with distinct characteristics. What they share is diligence in



Indigo Drones' technology is reducing water and chemical usage

production. "Our farms are about quality not quantity and every bean is hand-picked, we will never be producing brands like Nescafé or Starbucks," states Vidal. Instead, the nation is fostering specialty brands such as Paya, which is working closely with small family producers in the mountains of Heredia and Chirripó. The results have received acclaim, he notes: "In 2021, our dark roast won the U.S. Specialty Food Association's new product in coffee and cocoa Sofi award. It's the first time any product from Costa Rica has won a Sofi award, so it's an immense honor for us and the country. It confirmed we have an excellent product, which is very different from the average commercial brand." Paya's award-winning coffee is rapidly gaining a presence in international markets, particularly the U.S., India and Asia, and is also available online, he says: "Last year we sold 5 tons, our ambition is to sell 5 tons a month and we have the capacity to do that."

More technologies mean fewer agrochemicals

Another entrepreneurial Costa Rican company is looking to the skies to elevate sustainability and productivity. Led by CEO Sergio Ballester, named one of MIT Technology Review's Innovators Under 35 in 2015, Indigo Drones is the national leader in hardware, software, services and support for precision agriculture based on unmanned aerial vehicles (UAVs) and Internet of Things devices. The company emerged from the Ballester family's agrochemical business after he had spent time working in China, where he became experienced in the use of specialized agricultural UAVs for aerial mapping photography and data collection to monitor the needs and development of crops, for irrigation and for spraying fertilizers and chemicals. "I saw the potential in the market, we decided to switch the business to precision agriculture and we were the first to introduce this kind of technology in Costa Rica," says Ballester.

The technology has many benefits for farmers of both Costa Rica's high-value export crops and domestic staples such as sugar cane and rice. For instance, he notes: "The conventional way to apply fertilizers or chemicals is by tractor or hand-operated spray pumps, which involves tiresome, heavy and high-cost labor. It also wastes large amounts of water—for example, spraying pineapples fields conventionally uses about 1,000 liters of water per hectare. With drones, this can be reduced to 50 liters." Replacing tractors with electric drones is good news for health security as well: toxic agrochemicals can be precisely applied to specific areas, so much lower volumes are used, while workers no longer have to be in direct contact with them. And it moves the sector away from fossil fuels toward locally generated renewable energy as a power source. Additionally, "By using this technology, farmers can increase their planting area and enhance crop productivity, or they can use that extra space to plant trees and recapture carbon," the CEO enthuses.

The company faced one major challenge in persuading the sector to embrace its technology: the relatively high cost made investment in it a difficult decision for farmers who did not know how to profit from it, as no Costa Rican organizations offered education programs in precision agriculture, he reveals: "To overcome this, we started educating farmers on the possibilities ourselves. We've created an online agricultural academy that provides all the necessary knowledge for precision agriculture that covers everything from sensors, satellites, drones and software to soil sampling. We explain what's available and how to use it and, as participants become familiar with the technology, they see their farming becoming more efficient."



Sergio Ballester
CEO, Indigo Drones

Indigo Drones is now replicating this successful approach to building uptake of precision farming in other Latin American and Asian countries that grow similar crops to its home nation. It has recently opened an office in Panama, for example, although its usual method for opening new markets is to find a local partner and supply them with support, education and products from Costa Rica. The company is also expanding domestically by setting up additional regional branches and employing extra trainers.

Ballester is proud of the contribution Indigo Drones has made to reducing water and chemical usage in agriculture: "Coming from a business that used to produce pesticides, it's quite a transformation! However, knowing that people who couldn't use cell phones or computers are now able to use our equipment and pilot drones is the biggest gratification for us. Our technology is having an impact on farmers' lives and completely changing the agricultural sector."

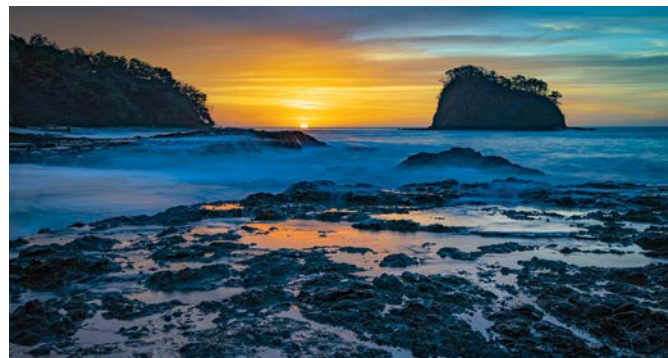


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From the moment tourists touch down in Costa Rica, they are immersed in its ‘pura vida’ lifestyle

Home to about 6.5 percent of the world’s biodiversity, which flourishes amongst an awe-inspiring array of stunning landscapes, including lush tropical forests, mountain peaks, volcanoes, wonderful beaches and blue seas, Costa Rica is a top location for discerning tourists who want to experience its renowned “pura vida” lifestyle.



Ricardo Hernández Laríos
CEO
AERIS Holding
Costa Rica

Most visitors arrive from North America and Europe and, unsurprisingly, Costa Rica is particularly popular with ecotourists, those seeking adventure, plus an increasing number of digital nomads and nautical tourists. “We’re not a destination for everyone: we aim to be a long-stay, boutique destination and we know our product would be negatively affected if we attracted a large quantity of visitors,” asserts William Rodríguez López, Minister of Tourism and director of the promotion agency Instituto Costarricense de Turismo (ICT). According to the minister, Costa Rica has two unique advantages for tourists: “One is the Costa Rican people. We treat our visitors as real friends and one of us. The second is that Costa Rica is a small nation, where you can enjoy breakfast in the mountains, dinner on the beach and plenty in between on the same day.”

In 2019, the country welcomed a record 3.1 million foreign visitors, with the vast majority arriving at Juan Santamaría International Airport (SJO) near San José, an exceptionally well-connected gateway with 25 international airlines offering non-stop flights to and from 36 places in North and Latin America, Europe and the Caribbean. SJO handled over 5 million passengers the year before COVID called a halt to tourism—but unlike many global counterparts, it has already regained 95 percent of its traffic. “For an international destination country, that is outstanding and we expect to recover to our pre-pandemic passenger numbers in 2023, two years earlier than forecast,” says Ricardo Hernández Laríos, CEO of AERIS Holding Costa Rica, SJO operator and part of the CCR Group of Brazil, one of Latin America’s largest concession players.

Hernández puts this achievement down to collaboration, a pillar of the company’s approach to business: “We sat down with the ICT, the Minister of Health, civil aviation authorities, airport police and the airlines to discuss how to reopen quickly, consistently and coherently. AERIS’s role is to operate SJO and invest in infrastructure, but working together with all stakeholders is very important to us. It infuses all our activities and is our key differentiator.” Another illustration of this is the company’s close partnerships with airlines, he states: “If we can help them in any way to make their business cases stronger, we do so.” Since 2009, when the company was awarded the contract to operate the airport in Costa Rica’s first-ever public-private partnership (PPP) project, AERIS’s investment in SJO and its services has garnered accolades. In 2022, for instance, Skytrax awarded it best airport and best airport staff in Central America and the Caribbean. “We take seriously the responsibility of being the first and last impression that tourists have of the country. Within the airport, we provide a ‘pura vida’ experience that aims to give the first immersion into Costa Rica for visitors, with all the warmth, smiles and excellent customer service that Costa Ricans offer. We always strive to exceed the parameters established in our contract and that’s one of the reasons why we are a successful airport,” notes Hernández.

AERIS carried on during the pandemic, investing \$8 million on freeing up space for an upcoming expansion and SJO’s food court receiving a total transformation, he says: “Even though the airport was shut, we wanted to continue to honor our commitment to Costa Rica. As part of CCR Group, AERIS has the support to keep going through difficult times and behave as a good partner to the government; that’s a difference we bring to the table. We are in a PPP with the government, which has supported us in bad times. Thanks to the support of CCR and our partnership with the government, we were able to be a catalyst and cornerstone for Costa Rica’s tourism recovery.”

A core element of AERIS’s ongoing investment is technology. In upcoming years, for example, it is investing in increasing the number of auto check-in kiosks, and introducing biometric e-gates to speed up the boarding process and make passengers’ journey through the airport more convenient and seamless. Another is sustainability and in 2021 SJO obtained ISO 50001 certification after AERIS implemented technology that drastically reduced greenhouse gas emissions, energy consumption and water usage, Hernández discloses: “That’s in CCR’s DNA and it aligns with Costa Rica’s values. The airport is a key piece of its infrastructure: we connect the country to the rest of the world in a sustainable way, always looking to the future and while having a positive impact in the community within which we operate.”

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