MINISTERIE VAN BUITENLANDSE ZAKEN

The Costa Rican Medical Equipment Sector

Investigation of the Costa Rican Medical Equipment Sector for Dutch companies

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Acronyms

CCSS	Costa Rican Institute of Social Security
CINDE	Costa Rican Investment Promotion Agency
FDI	Foreign Direct Investment
FTZ	Free Trade Zone
GDP	Gross Domestic Product
MDM	Medical Devices Market
MDTC	Medical Device Training Center
MNC	Multinational Corporations
PROCOMER	Foreign Trade Corporation of Costa Rica
R&D	Research and Development
SMEs	Small and Medium Enterprises
TFHC	Task Force Health Care
US $	United States Dollar
WTO	World Trade Organization

1 Foreword

The economic growth of Costa Rica is mainly driven by Foreign Direct Investment (FDI). Within Central America, besides Panama, Costa Rica consolidated its position as the largest recipient of FDI. In 2011 FDI rose by 24% to US$ 6.9 billion. For 2012 this is expected to increase to US$ 7.5 billion, marking five consecutive years of strong growth. It is one of the reasons why Costa Rica recently ranked 19 in the top 20 emerging economies worldwide attractive for investments. According to Ernst & Young Costa Rica is the fifth most attractive country for investments in Latin America after Brazil, Mexico, Chile and Argentina.

The health system is well developed in Costa Rica. 30 hospitals are part of the Costa Rican Institute of Social Security (CCSS). Furthermore, many private hospitals opened their doors recently. The medical equipment sector in Costa Rica developed after the arrival of a few important companies in the 1980s. Now it is one of the most important export sectors of Costa Rica. The public sector, mainly represented by the CCSS, buys around 85 percent of the medical equipment in Costa Rica. Little local production is destined for the local market and because medical equipment needs to be replaced many times it is expected that the import of medical equipment will increase over the next years. At the same time the demand will raise from Europe, because the expected sharp rise in the ageing population.

In order to enhance the market opportunities for the Dutch business abroad, this report provides concise practical and up-to-date commercial information regarding the medical equipment sector in Costa Rica. Moreover, features the possibilities and difficulties for investment by Dutch companies in this sector in Costa Rica. The most significant trends and developments within the sector and the relevant institutional and legal settings are indicated. Furthermore, market opportunities and threats are included, together with information for further reading and contact details.

The focus of this report are the three main growth areas of the medical equipment (devices) sector; the first of which being the public market controlled by the CCSS, where demand for higher quality health care has been higher because of an increased income per capita and where there are possibilities for Dutch exports because the CCSS is investing a lot of money on new facilities and new equipment. The second growth areas is medical tourism, an industry with an income of US $ 337.7 million in 2012 and an expected sharp raise to over US $ 800 million within three years. The third growth area is Costa Rica as 'springboard' , part of the global value chain, where high tech assembly can take place before exporting the products to the final destination. For several reasons such as proximity to end-markets and free trade treaties Costa Rica is well suited for this practice.

The information in the report is based on a literature research of newspapers, economic magazines, and statistical data. In addition, interviews with institutions such as CINDE and PROCOMER and industrial companies active in the medical equipment sector in Costa Rica contributed to the data. These interviews were executed between September 2012 and February 2013.

For general business information about Costa Rica you can also consult the trade pointer Costa Rica. This can be found on the website of the Dutch Embassy in Costa Rica, www.holanda.cr or on the 'Handelswijzer' www.handelswijzer.com for information in Dutch, or the 'Guía de Comercio' www.guiadecomercio.nl for information in Spanish.

2 Summary

2.1 Background: Why Costa Rica?

Costa Rica has a stable political system, good infrastructure, a high education level, and low local costs for land and labor. The United States are nearby and there is duty free access to the US market, as well as to other important markets such as China, and soon the European Union, through free trade agreements. Costa Rica has a good technological infrastructure and a high level of social development. Costa Rica is one of Latin America's most stable economies. After the last economic crisis, almost 25 years ago, it has maintained a yearly growth rate of over 4,5%, which translates into a per-capita income level of $12,100 in 2011. In addition, it has achieved the highest education and health levels in Latin America and one of the best in the world, and has provided wide access to health services, social security, potable water and basic public services. Costa Rica is the first country in Latin America in innovation, the first high-tech exporter in Latin America (fourth in the world) and the first country in Central America & the Caribbean for Future FDI. Furthermore, Costa Rica is the 13th most attractive country for outsourcing activities of companies in the world and best Latin American country. The ranking also reflects that the country now competes not only with continental leaders but also directly with global giants such as India, Poland, Ireland and Malaysia.

Many important American multinationals have established operations in Costa Rica by outsourcing parts of their business, for example Intel, Baxter, Boston Scientific, St. Jude Medical, Hospira, Hewlett-Packard, Proctor & Gamble, Motorola, Microchip Technology, Abbott Laboratories and Sykes. Costa Rica has a strategic free trade zone regime for foreign investors, which offers exemption from taxes on corporate profits, dividends, municipal taxes, import duties and sales taxes. In addition, speedy transit of goods is facilitated by fast track customs procedures (including customs located on site). Other country advantages include 24 world cargo shipping lines and 26 consolidates cargo airlines, a main international airport nearby the capital San José, courier services and the online document filing and on-site customs in FTZ. Currently the Dutch company APM Terminals is building a new deep water container terminal in the province of Limón, an investment of around $1 billion. New opportunities are offered within new trade zones in the vicinity of the new port. Costa Rica scores high on several international lists, for example that one of 'most globalized countries', 'attracting the most foreign capital' en having a 'favorable climate of investment '.There are three investment incentive programs: the free trade zone system, a so-called active finishing regime, and a duty drawback procedure.

Between 2012 and 2017, per capita consumption in US dollar terms is forecast to grow by 45%. Since 2001 exports have grown at an average annual rate of 7.3%. Simultaneously with the expansion of the economy the GDP per capita also increased. This increase is expected to continue at a significant rate with highly positive impacts for private consumption. Exports from the Free Trade Zone sector increased 11.5 percent in 2012, while companies outside the regime increased sales 5.4 percent. Sales from companies in free zones increased from $4.5 billion in the first 10 months of 2011 to nearly $6 billion in the same period this year, a growth of 11.5%. FDI inflow in Central America rose by 24% in 2011. In the region, Costa Rica was the highest receiving country of FDI with US$ 2 billion which was a rise of more than 50% in comparison to 2010.

With a share of approximately 25% in total export value of Costa Rica, the Netherlands is the second largest trading partner of the country, and the principal European market for products from Costa Rica. When compared to Latin America, Costa Rica is the third largest supplier to the Netherlands, only surpassed by Brazil and Chile. Costa Rica is a signatory of several trade agreements. Costa Rica has sought to widen its economic and trade ties within and outside the region. In 2008, 90% of goods

- Market access: **2.4** billion people and **63%** of worldwide GDP
- **86%** of exports of goods covered by FTAs
- Investment Promotion and Protection Agreements with **15** countries

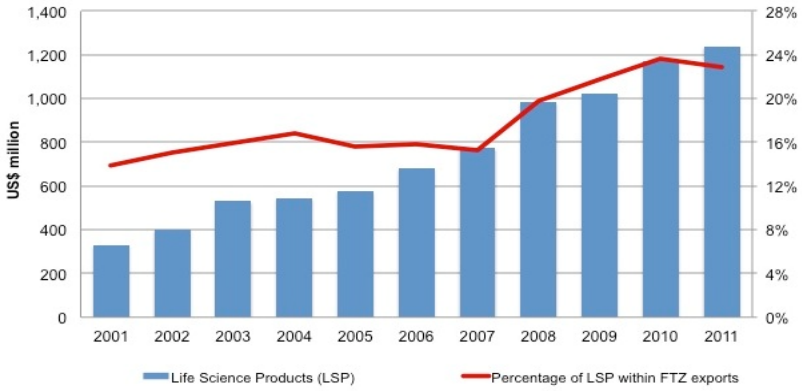
Note: a/: European Free Trade Association

from Costa Rica were exported to world markets under Free Trade Agreements (FTA). Current Trade Agreements in place are DR-CAFTA (US, Central America and the Dominican Republic) and CARICOM. Besides Costa Rica has free trade agreement with the following countries: Panama, Chile, Canada, Mexico, and China. The country signed an Association Agreement between the EU and Central America in 2012, and trade treaties with Colombia, Peru, India, and South Korea are being negotiated.

2.2 Medical Equipment Sector in Costa Rica

The medical equipment sector is a different game and it is gaining more weight every year. It is important to mention that there are three different growth sectors which are interesting. These are the public sector (government controlled CCSS), where demand for higher quality health care has been higher because of an increased income per capita and an ageing population and where there are possibilities for Dutch exports because the CCSS is spending a lot on new facilities and new equipment, the sector of medical tourism and the high tech assembly export sector.

Costa Rica is not only the second largest medical devices exporter in Latin America, but one of the best locations for high technology operations in the world. The medical equipment sector plays an important role in Costa Rica's economy. It was established in the 1980s and is now the fourth most important export sector of the country. The investment ratio is 3:1 which indicates that companies see great possibilities. The export that is directed to Europe, with the Netherlands as the most important transit country, receiving about 40% of all export to the EU from Costa Rica, increased strongly when the US company BeamOne started sterilizing the medical equipment on Costa Rican soil, making it possible that the products can now be directly exported to Europe. In 2011, exports of medical devices accounted for 3.0% of the country's GDP; and represented 11.8% of the total exports of goods (US$1,239.2 Million). The Free Trade Zone exports of this sector have grown at an annual average of 8.6% annually since from 2001 to 2011. The related life sciences sector in Costa Rica has grown 375% over the past 10 years and its 50 companies employ almost 12.000 people. The medical devices sector is the fourth biggest exporter ($1,2 billion) in the country, its exports have grown 3



times faster than the rest of free trade zone exports. In the last 5 years (2006-2011), the investment of medical devices companies has represented around 50% of the total FDI generated by Free Trade Zone companies. It is responsible for more than 13,000 jobs, 9 times higher than it was a decade ago.

Related to the success of the medical equipment sector in Costa Rica is the sharply increasing medical tourism. 70% of the private clinics receive medical tourists throughout the whole year. In 2011 almost 50.000 of them visited Costa Rica. On the average they spend around 7000 US$. The income of this industry is estimated at 337.7 million US$. Moreover, medical tourism is forecasted to triple within the next 3 years to $ 800 million.

A booming market such as the medical equipment sector has its necessities. There is a market for all kind of medical equipment in Costa Rica's public sector, such as ultrasound and X-ray devices, gamma cameras, operation tables, cleaning systems, boilers and electricity generators. According to CINDE, the Costa Rican Investment Promotion Agency, there is also a market for molding (plastics), precision mechanics, cardiovascular and laboratorial products. Private companies signal they are in need of suppliers with high quality standards who want to develop their systems and high tech tooling companies. In the area of metals, there are no local suppliers and companies that are specialized in designing industrial equipment are rare. Furthermore, what would be very welcome are resin pallets. In addition, private companies are very keen on innovations. They search for them at sectorial fairs. This would be a good entry point for Dutch companies.

There is a lack of human capital for the production companies and within the public sector. Apart from the shortage of specialized doctors and nurses, there are not enough graduates in quality engineering. There is a lack of quality regulatory and quality control, for example in the areas of electro mechanics and industrial maintenance. At the moment, companies are keen to receive foreigners for these positions. Another market opportunity is the establishment of employment agencies, right now virtually inexistent in Costa Rica, which can seize upon the shortage described and actively help companies to find employees with specific requirements. In addition, employment agencies can contribute to training of employees.

2.3 Concluding Remarks

Entering the Costa Rican is not always easy. Although the positive aspects mentioned above on establishing a business in Costa Rica, according to the Ease of Doing Business Index starting a business Costa Rica ranks 122 out of 183 countries. The low rank is caused by the lengthy process of procedures which is also longer than the average of Latin America. The Global Competiveness Index mentions that the most problematic factors for doing business in Costa Rica are the inefficient government bureaucracy, the inadequate supply of infrastructure, and the access to financing. Notwithstanding these challenges, Costa Rica depicts a fairly strong overall position in the region thanks to its friendly policies toward trade, with low trade tariffs and few constraints on FDI, and its strong educational system—both in terms of pre-university enrollment rates and overall quality. The country presents strong levels of technological adoption with many companies in high-tech industries, as well as solid business sophistication.

Taken everything into account the possibilities in the medical equipment sector are very attractive for Dutch companies.

3 Background: Why Costa Rica?

In this chapter a brief country overview of Costa Rica is given. The main characteristics regarding population, government and geographic location are described. Subsequently, an overview and analysis of the main economic data and the market of Costa Rica is given.

3.1 Brief country overview

Capital	San José
Official language	Spanish
Government	Presidential Democratic
Time zone	UTC-6
Monetary unit	Costa Rica Colón
Total population	4.3 million
Density	78.6 hab/km²
Total surface	51.100 km²

Figure 1 Costa Rica (source: World Fact Book)

Costa Rica counts with a stable political and economic system, good infrastructure, a high education level, and low local costs for land and labor. The business culture is western, and the official language is Spanish. Costa Rica is divided in seven provinces: San José, Alajuela, Heredia, Cartago, Punta Arenas, Limon and Guanacaste. The country has numerous volcanoes, high mountainous areas and tropical coastal zone. Heavy rains occur from May to November while the rest of the year is relatively dry. The central valley with the capital San José, Alajuela and Heredia concentrates more than 60 per cent of the national population. Since colonial times it has been the heart of economic activity, and population settlement.

The geographical location of Costa Rica is seen as strategic: it is in the center of the Americas functioning as a bridge between North, Central, and South-America. The United States are nearby with a 2:50 hours flying time to Miami, and there is duty free access to the US and European Union markets, as well as to other important markets such as China through free trade agreements. Costa Rica has a good technological infrastructure, a high level of social development, and it has a long tradition of a stable political situation. At the Human Development Index Costa Rica is placed above the regional average of 0.731 with a score of 0.744, which gives the country a rank of 69 out of 187 countries (2011).

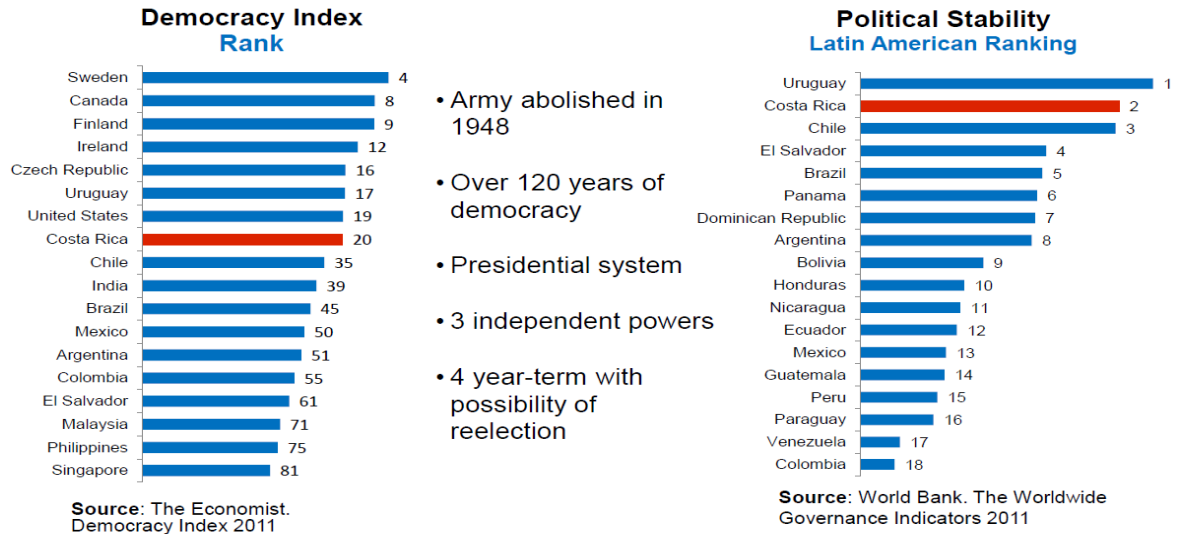
Actually, Costa Rica is one of Latin America's most stable economies. After the last crisis, almost 25 years ago, it has maintained a yearly growth rate of over 4,5%, which translates into a per-capita income level of $12,100 in 2011. In fact, the Costa Rican economy has maintained stability, albeit the different international crises, which have affected other countries such as Mexico, Turkey and Venezuela in 1994-95; Thailand, Malaysia, Indonesia, Philippines, South Korea and the Czech Republic in 1997; Russia and Brazil in 1998; and Argentina in 2002. These decades of stability and economic growth reflect relevant social achievements, among them, the fact that in the last 20 years poverty has been reduced from 40% to less than 20%. In addition, it has achieved the highest education and health levels in Latin America and one of the best in the world, and has provided wide access to health services, social security, potable water and basic public services.

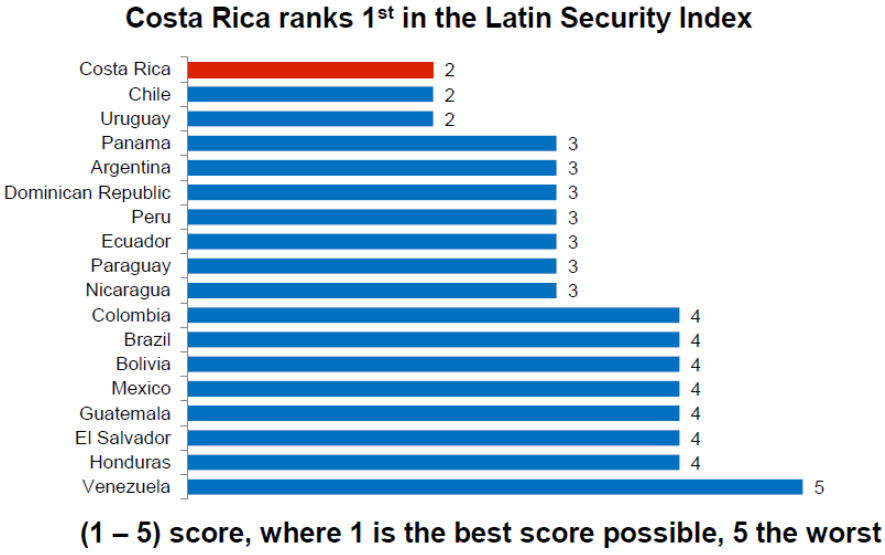
Costa Rica is the first country in Latin America in terms of innovation (World Economic Forum, Report 2011-2012), the first high-tech exporter in Latin America (fourth in the world, The World Bank 2011) and the first country in Central America & the Caribbean for Future FDI (FDI Intelligence, Caribbean & Central American Countries of the Future 2011). San José is the fourth city in quality of life in Latin America (Economist Intelligence Unit, Livability Index 2011) and the fifth best city for future FDI in Latin America (Financial Times, FDI Intelligence 2011).

Furthermore, Costa Rica is the 13th most attractive country for outsourcing activities of companies in the world. Besides, Costa Rica is chosen as best Latin American country for outsourcing (Tholons Global Outsourcing Destinations Report 2013). In this ranking Costa Rica is described as 'a key player in the corporate services industry and information technology in Latin America and the world.' The ranking also reflects that the country now competes not only with continental leaders but also directly with global giants such as India, Poland, Ireland and Malaysia. The only two countries in Central America that made the list besides Costa Rica were Nicaragua and Guatemala, appearing at places 95 and 96, respectively.

Costa Rica's high position is due to many reasons, such as low costs (taxes and wages), the environment (low economic and political risks), and the work force (experience, education, knowledge of languages, and availability). Many important American multinationals have established operations in Costa Rica by outsourcing parts of their business: Intel, Baxter, Boston Scientific, St. Jude Medical, Hospira, Hewlett-Packard, Proctor & Gamble, Motorola, Microchip Technology, Abbott Laboratories and Sykes.

For more information regarding business opportunities for Dutch companies within the other fast growing sector of Costa Rica, information and communication technology; please contact the Dutch Embassy in Costa Rica. Addresses are listed as annex of this report.





Source: Latin Business Chronicle (FTI Consulting), 2011

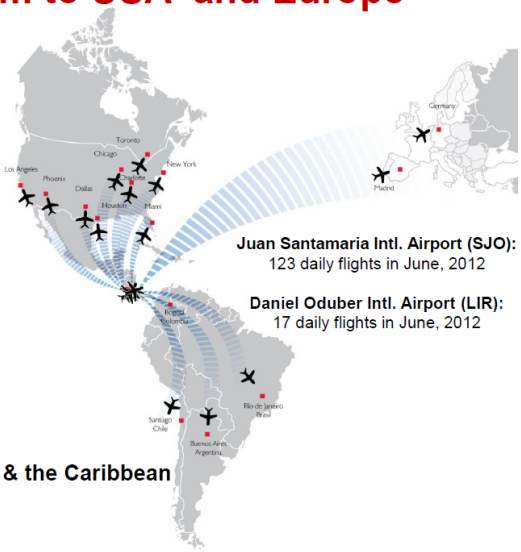
Note: This index measures the countries' insecurity based on homicide rates as well as other factors affecting corporate security, and the safety of foreign business executives

Costa Rica offers a strategic free trade zone regime for foreign investors, which offers exemption from taxes on corporate profits, dividends, municipal taxes, import duties and sales taxes. In addition, speedy transit of goods is facilitated by fast track customs procedures (including customs located on site). Other country advantages include 24 world cargo shipping lines and 26 consolidates cargo airlines, a main international airport nearby the capital San José, courier services and the online document filing and on-site customs in FTZ.

Currently the Dutch company APM Terminals is building a new deep water port in the province of Limón with an investment of around $1 billion. There are opening up a lot of opportunities within new trade zones around this investment.

Costa Rica is a platform to USA and Europe

City	Flight Frequency	Flight Time (hrs:min)
Direct Flights to Europe		
Frankfurt, Germany	Twice a week	13:00
Madrid, Spain	Daily	10:25
Direct Flights to US		
Chicago, IL	Once a week	6:50
Dallas, TX	Daily	4:20
Houston, TX	Daily	3:35
Miami, FL	Daily	2:50
New York, NY	Daily	4:45
Newark, NJ	Daily	5:15



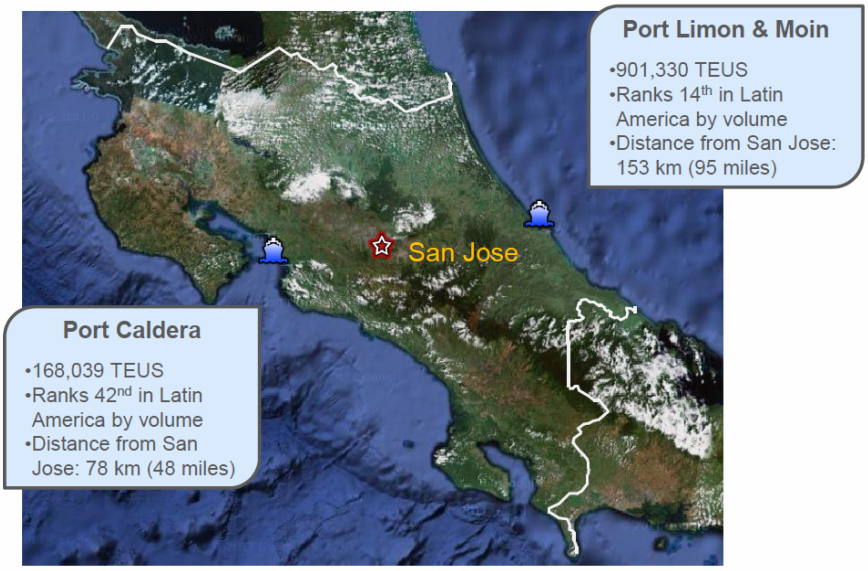
Juan Santamaria Intl. Airport (SJO):
123 daily flights in June, 2012

Daniel Oduber Intl. Airport (LIR):
17 daily flights in June, 2012

SJO is the 3rd best airport in Latin America & the Caribbean
ASQ Top Performers 2011

Source: Directorate General of Civil Aviation, 2012

Costa Rica has ports in the Caribbean and the Pacific coasts



Port Limon & Moin
- 901,330 TEUS
- Ranks 14th in Latin America by volume
- Distance from San Jose: 153 km (95 miles)

Port Caldera
- 168,039 TEUS
- Ranks 42nd in Latin America by volume
- Distance from San Jose: 78 km (48 miles)

TEU: Twenty foot equivalent unit
Source: Container Port Movements Ranking, ECLAC 2012

Port of Destination	20' STD (US$)	40' STD (US$)	Transit Time (Approx. Days)
Hamburg, Germany	2,100	2,500	16
Rotterdam, Netherlands	2,150	2,650	13
Shenzhen, China	1,723	2,468	30-35

Source: DHL. June 2011

Port of Destination	20' STD (US$)	40' STD (US$)	Transit Time (Approx. Days)
Houston, TX US	1,860	2,550	7
Miami, FL US	1,660	2,250	5
US East Coast Ports: *New York, New Jersey, Norfolk, Charleston, Savannah, and Jacksonville*	1,850	2,300	16
US West Coast Ports: *San Pedro and Oakland*	1,950	2,200	16
Veracruz, Mexico	2,000	2,800	10

Source: Expeditors. June, 2011

- Market access: **2.4** billion people and **63%** of worldwide GDP
- **86%** of exports of goods covered by FTAs
- Investment Promotion and Protection Agreements with **15** countries

Duty free access
In negotiation
In exploratory phase

Note: a/: European Free Trade Association

3.2 General market and economic data

In this section the general economic data of Costa Rica is described, addressing subsequently an introduction to the market and the issues of economic growth, trade balance, FDI, commercial relations and treaties, incentives, employment and human capital, innovation and migration.

3.2.1 Trends on the Costa Rican market

Since the 1990s the focus point of the Costa Rican economy moved from export of coffee and bananas to the services sector and industry. Prices plummeted on the world market and the agricultural sector could not keep the national economy running. Costa Rica managed to attract many direct investments since then. Several MNCs in, for example, information technology and pharmaceutics founded production locations in the country. Other developed industries are those of quality textile, tourism and construction, mainly by the booming hotel business. Costa Rica is now the biggest exporter of de Central-American region. The liberated market of Costa Rica will probably enhance interest in Costa Rica in the near future. Moreover, the Costa Rican government, stable and democratically elected, is an active promoter of foreign investments.

Over the last few decennia Costa Rica developed a stable macro-economy, especially in relation to the other countries in the region. Costa Rica scores high on several international lists, for example that

one of 'most globalized countries', 'attracting the most foreign capital' en having a 'favorable climate of investment '. On the other hand, bureaucracy is definitely a barrier. Families have started consuming much more over the last years, because the unemployment marks are low, income is pretty high, the interest is low and the inflation is not high. On the other hand, circumstances have been affected negatively by the economic situation in the United States, which is the most important importer for Costa Rica. Therefore, Costa Rica is searching new trading partners, and they signed a bilateral treaty with China.

The export of Costa Rican products is also increasing in size. In 2012 the export grew 9% compared to 2011. Total exports amounted up to $ 16.875 million. The medical equipment sector is a sector apart and it is gaining a larger part of the export cake every year.

Costa Rica is among the top 5 service locations in the Americas, based on an index that considers: people skills and availability, business environment and financial structure.

3.2.2 Economic growth

Forecast economic growth in Central America remains impressive. Specifically Panama and Costa Rica have been two of the few investment hotspots over the last few years as many other countries around the world suffered from the European and North American led economic turmoil. Central America showed a slowdown during 2012 from 4.7% to 4.2% but compares favorably with the rest of the world. Economic recovery from the international crisis in Central America took only two years. The Central American domestic consumer market is set to grow in prominence over the next five years. A low economic base means that GDP per capita is expected to increase at a significant rate, with highly positive effects on private consumption. Several international organizations (WB, IDB, IMF) have a positive outlook over the longer term as well, with regional GDP per capita (in US dollar terms) expected to increase by more than 100% over the next 10 years and regional real GDP growth set to average 3.2%.

In comparison to its Central American neighbors such as Guatemala and El Salvador, Costa Rica has a higher per capita GDP growth prospect. The per capita GDP growth rate was also higher than Latin America and the Caribbean as a whole, even though it suffered worsening terms of trade while most South American countries enjoyed improving terms. Between 2012 and 2017, per capita consumption in US dollar terms is forecast to grow by 45%. As can be seen in table 1 besides the relatively small decrease of growth in 2009 due to the worldwide economic crisis, the last few years Costa Rica also experienced significant economic growth. In Costa Rica the real GDP grew by 5% in 2012. Due to the fact that Costa Rica's economic outlook remains strongly associated with developments in the global economy, and the US in particular, the country's main trade and investment partner, it is predicted that the economic growth in 2013 will be relatively less than previous years, however, still above 4%. The next years the expansion of the economy is expected to continue. The expansion is closely tied to external demand and will be driven by services as well as the manufacturing sector (particularly high-tech industry). Since 2001 exports have grown at an average annual rate of 7.3%. Simultaneously with the expansion of the economy the GDP per capita increased the last years. This increase is expected to continue at a significant rate with highly positive impacts for private consumption.

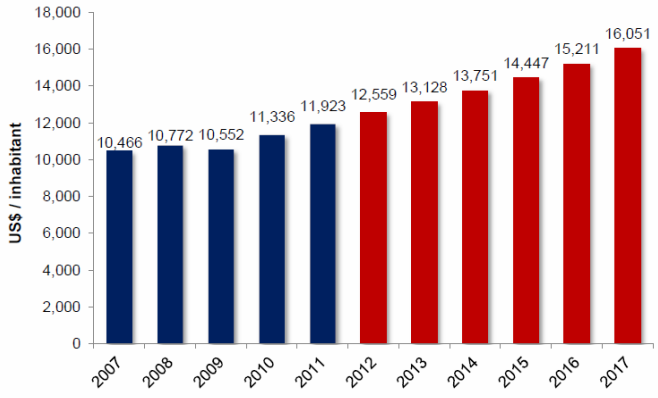
Costa Rican exports of goods increased by 8.9 percent this year compared to 2011, the Foreign Trade Promotion Office (Procomer) reported. During the period, the country sold products worth $16.9 billion, which represents $1.125 million more than in 2011. Exports from the Free Trade Zone sector increased 11.5 percent in 2012, while companies outside the regime increased sales 5.4 percent, according to Procomer. Sales from companies in free zones increased from $4.5 billion in the first 10 months of 2011 to nearly $6 billion in the same period this year, a growth of 11.5%. Among the most important products are: pineapple, with increased exports of 9.7 percent, from $594 million to $651

million; electric wires, with an increase of 33 percent; coffee, up 17 percent; and medical supplies, which registered a whopping 130 percent increase, according to the report.

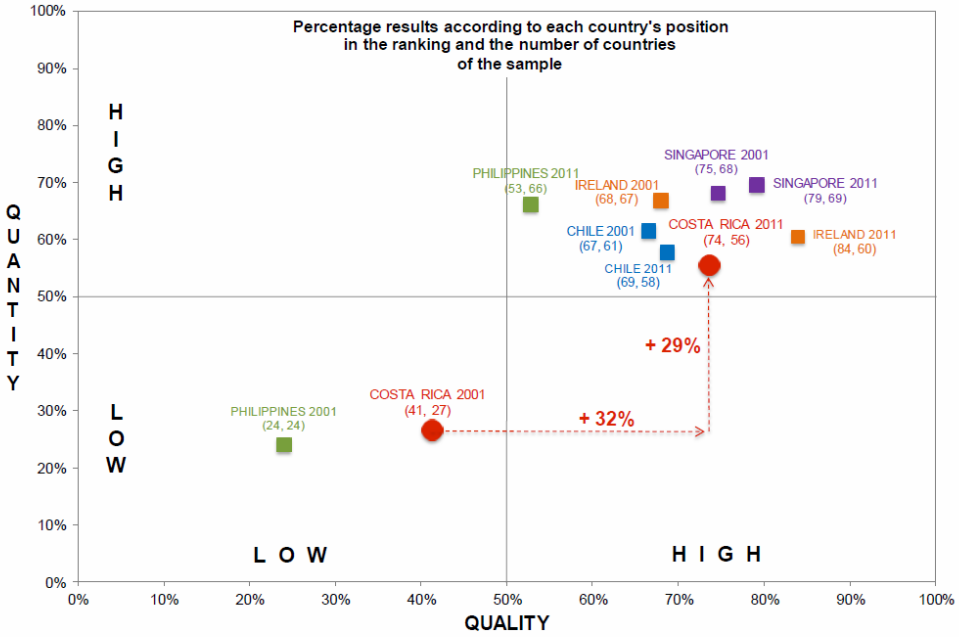
Table 1 Economic forecast Costa Rica (EIU, 2012)

(% unless otherwise indicated)	2009	2010	2011	2012a	2013a	2014a	2015a
GDP							
GDP	-1.0	4.7	4.2	5.0	4.2	4.5	4.4
Expenditure on GDP							
Private consumption	1.7	4.6	4.6	4.2	3.6	3.8	3.7
Government consumption	6.7	4.7	1.9	2.4	2.4	3.1	2.5
Gross fixed investment	-11.1	4.1	9.6	6.5	6.8	7.5	7.7
Exports of goods & services	-6.0	4.9	7.0	4.4	5.1	5.9	6.1
Imports of goods & services	-18.9	14.0	12.2	5.0	6.2	6.9	6.6
Current-account balance (% of GDP)	b	b	-5.4	-5.5	-6.0	-6.4	-6.4
Origin of GDP							
Agriculture	-2.8	6.4	0.5	3.3	3.3	3.4	3.4
Industry	-3.2	2.2	2.8	3.6	4.3	4.7	4.9
Services	1.1	5.6	5.4	5.2	4.0	4.9	4.6
Population and income							
Unemployment rate (av)	4.6	4.9	7.7	7.9	7.5	7.2	6.9
Prices and financial indicators							
Commercial bank prime lending rate	b	b	16.1	16.0	15.8	15.5	15.5
Exchange rate C:US$ (av)	565.2	513.0	505.7	510.3	513.4	518.7	523.4
Consumer price inflation (av)	4.0	5.8	4.9	4.8	5.7	5.6	5.5

- GDP per capita PPP is one of the **highest in Latin America**
- GDP per capita PPP **has grown 67% since 2000**
- **Poverty has been reduced 43%** in the last 25 years



Source: CINDE based on data from IMF, 2012



Source: CINDE based on data from The Global Competitiveness Report 2012 – 2013, The World Economic Forum.

3.2.3 Trade balance

The economic growth is primarily caused by the external demand. Costa Rica lacks a domestic consumer goods industry and therefore relies on imports to satisfy growing consumer demand. This is reflected in the growing deficit in goods trade. It will lead to a widening of the current-account deficit from 5.4% of GDP in 2011 to 6.4% of GDP in 2015. However, it is expected that the services surplus will continue to rise as a result of tourism, one of the major sources of foreign revenue, but also as a result of growth in export-oriented business processing. It is assumed that the current-account deficit will be fully covered by FDI.

The Netherlands is the second largest trading partner of Costa Rica with a share of approximately 25% in total export value of Costa Rica. When compared to whole Latin America, Costa Rica is third largest supplier to the Netherlands, only to be surpassed by Brazil and Chile. More than 50 Dutch companies have established an office in Central America. Of these, about 25% have the status of regional office. Some well-known Dutch companies in Central America are Vopak, APM Terminals, Unilever, Heineken, Boskalis, Van Oord, KLM, Philips, Seatrade, Smit, DSM, Princess, Aqua, Stork, TNT, TMF Group, Verenigde Tankrederij and HILCO.

2011 Dutch-CA Trade Balance	NL Imports	%	NL Exports	%	Total trade	%	Trading partner
Costa Rica	**2.292**	**94%**	**119**	**36%**	**2.411**	**87%**	**2**
Panama	22	1%	92	28%	114	4%	8
Guatemala	69	3%	53	16%	122	4%	12
Nicaragua	6	0.2%	14	4%	20	1%	n/a
El Salvador	9	0.4%	22	7%	31	1%	n/a
Honduras	40	2%	27	8%	67	2%	n/a
Central America	**2.438**		**327**		**2.765**	**4.0**	

Source: CBS Statline, 2012.

3.2.4 FDI

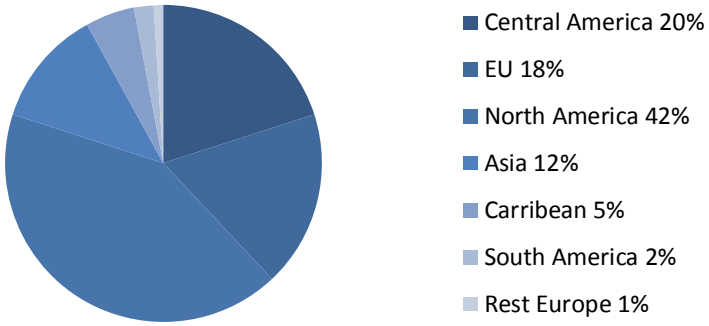
FDI inflow in Central America rose by 24% in 2011. In the region, Costa Rica was the highest recipient country of FDI with US$ 2 billion which was a rise of more than 50% in comparison to 2010. Since Intel established operations in Costa Rica in 1997, the country has focused on the attraction of international companies. It contributed to a yearly average growth rate of 17.7% of FDI; in 1997 FDI inflow was US$ 406,9 million FDI in comparison to US$2 billion of FDI in 2011. Investments in Costa Ricans free-trade zone represented 27% of the investment. A total of 130 companies established an operation in Costa Rica. For the coming years the current government has set a target for FDI to total $9 billion during its four-year term. A combination of strong regional growth and CAFTA free trade agreement led to the FDI upturn, especially in Costa Rica where many American companies have established new factories.

Foreign Direct Investments (Millions $) Annual averages	1994-2004	2004-2008	2008-2012	Relative difference 2004-2012
Costa Rica	**962**	**1.372**	**2.000**	**108%**
Panama	1.274	1.752	2.400	88%
Guatemala	409	422	850	108%
Nicaragua	367	357	625	70%
El Salvador	496	684	750	51%
Honduras	399	705	800	100%
Central America	**3.908**	**5.296**	**7.500**	**92%**

Source: CBS Statline, 2012.

3.2.5 Commercial relations

North America, neighboring countries, and the EU make up for 80% of the export destination. The US, the Netherlands and subsequently Panama are the three main export destinations of Costa Rica. With a share of approximately 25% in total export value of Costa Rica, the Netherlands is the second largest trading partner of the country, and the principal European market for products from Costa Rica. When compared to Latin America, Costa Rica is the third largest supplier to the Netherlands, only surpassed by Brazil and Chile. 87% of the Dutch trade with the region of Central America takes place with Costa Rica. For that reason Costa Rica is the 3rd most important trade partner of the Netherlands in Latin America, after only Brazil and Mexico. The Netherlands imports disproportionately more from Costa Rica than it exports to Costa Rica. However, this is also important for the Netherlands because the services sector greatly benefits from it.



Value of exports by region of destination (in %) 2011

In 2010 the main imported products from the Netherlands are parts for computers (11.8%), bulbs, tubers and rhizomes, producing plants (10%), and food preparations (7.6%). The main exported products from Costa Rica to the Netherlands are parts for computers (27.6%), integrated circuits and electronic microstructures (22.1%), and pineapple (10.4%). The principals exporting companies to the Netherlands are Components Intel Costa Rica, Hospira de Costa Rica, and Del Oro S.A (2010). In fact, the Netherlands import more (in value) from Costa Rica then from countries such as Argentina, Chile, Colombia and Mexico, as can be seen below:

	Import Value			Export Value		
	2008	2009	2010	2008	2009	2010
	1 000 euro					
Argentina	1 561 396	1 518 077	1 526 974	272 661	291 204	701 847
Brazil	4 854 321	3 892 875	4 397 274	1 231 398	1 108 571	1 797 062
Chile	1 004 276	727 912	813 643	222 450	236 092	332 324
Colombia	762 355	686 685	785 558	264 414	226 953	312 626
Costa Rica	1 547 108	1 568 610	2 299 250	196 849	100 579	99 332
Mexico	1 214 244	1 094 899	1 603 566	2 302 926	1 502 504	2 129 157
© Centraal Bureau voor de Statistiek, Den Haag/Heerlen 9-11-2011						

Costa Rica is a signatory of several trade agreements. Costa Rica has sought to widen its economic and trade ties within and outside the region. In 2008, 90% of goods from Costa Rica were exported to world markets under Free Trade Agreements (FTA). Current Trade Agreements in place are DR-CAFTA (US, Central America and the Dominican Republic) and CARICOM. Besides Costa Rica has free trade agreement with the following countries: Panama, Chile, Canada, Mexico, and China. The country signed an Association Agreement between the EU and Central America in 2012, and trade treaties with Colombia, Peru, India, and South Korea are being negotiated

The Free Trade Agreement DR-CAFTA exists out of El Salvador, Guatemala, Honduras, Nicaragua, and the Dominican Republic. DR-CAFTA improves Costa Rica's investment climate by strengthening the protection of intellectual property rights, providing a mechanism for arbitration, opening key sectors to competition, and assuring access to markets in other DR-CAFTA economies. With DR-CAFTA successfully implemented and similar agreements with the European Union and China, the administration of Laura Chinchilla is now shifting its primary focus from negotiation and implementation of agreements to maximization of their benefits. These agreements have accelerated the FDI in Costa Rica for the US and European countries that want to make use of it, because of the many advantages Costa Rica has which have been mentioned above, such as proximity to the US market and a high productivity workforce with less expensive labor.

Costa Rica and China established diplomatic relations in June 2007. Negotiations on a free trade agreement with the Asian giant began soon after. President Laura Chinchilla signed the agreement into law in June 2011. The trade agreement signed with China focused on the trade of goods. At least 90% of the goods from both sides will gradually enjoy zero tariff access to each other's markets. As for service trade, Costa Rica will further open 45 service sectors to China, and China will further open seven service sectors to Costa Rica, which is based on the WTO commitments of both sides. Meanwhile, the two sides have achieved broad consensus on rules of origin, customs procedures, technical barriers, sanitary and phytosanitary regulations, trade remedies and others. Costa Rica is now an important Central American trading partner of China's and China is Costa Rica's third largest trading partner. Thus, Costa Rica has a very favorable access to both the US and Chinese markets. For Dutch companies who would like to enter these markets, it could be a very tempting possibility to use Costa Rica as a springboard towards those markets.

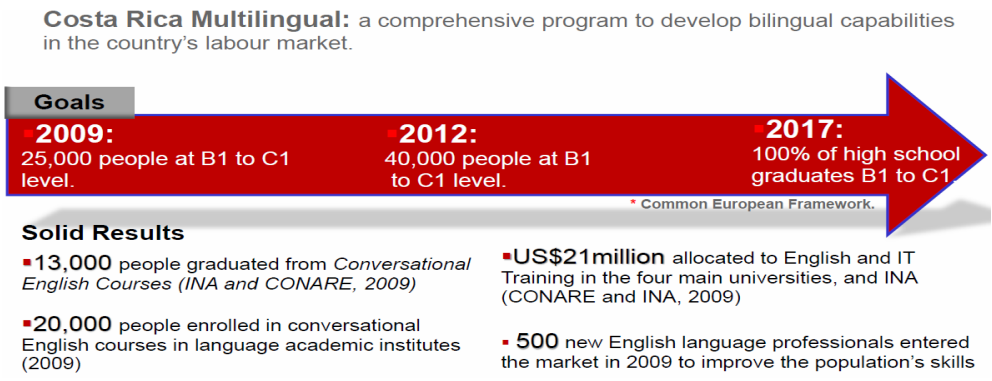
The Association Agreement between the EU and Central America (Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama) has as goal to improve market access for EU exports to Central America and vice versa. The EU27 had a $54 billion trade with those nations in 2011. The Association Agreement was signed in 29 June 2012 and the provisions related to the free trade area will probably enter into force at the end of this year, whereas the Agreement as a whole will enter into force as soon as it is ratified by all parties. Costa Rica expects to ratify it during the first semester of 2013. The Agreement will remove nontariff barriers for all industrial goods on both sides. It will largely eliminate tariffs for manufactured goods and fisheries with complete liberalization at the end of the tariff phase-out period, generally within a ten-year period and with only a small amount (4%) of products after 15 years. Upon entry into force of the Agreement, Central America will liberalize 69% of its existing trade with the EU. 99% of the agricultural and industrial products from Central America will get free access to the EU area and access for EU services to Central America will be improved. On the one hand, Central American countries are looking for innovative products, especially from Europe. On the other hand, the Central American market is a market of 43 million consumers, making it very attractive in itself.

3.2.6 Employment and human capital

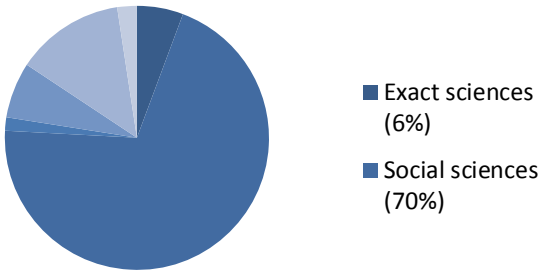
The labor force of Costa Rica is 2.12 million people of the 4.62 million inhabitants. The participation rate is 46%, and will likely reach 2.7 million people in 2016 with a gross participation rate of 52% in 2015. Underemployment is 7.8% and Costa Rica has an annual labor pool growth of 3%.

In Costa Rica education is free and mandatory since 1870. The country has a total of 59 universities of which 5 public and 54 private universities. The public expenditure in Costa Rica on education is 10.5% of GDP, and the educational system is ranked 23th globally by the World economic forum (2011) based on enrollment rate and the quality of education, making it the highest ranked country in Latin America. Also the Human Development Index ranks Costa Rica positively with 0.659 (1 is good) for education considering expected and mean years of schooling (2011). The country has a high adult literacy rate of 96.1%, and the gross enrolment rate is 109.9% for primary, 96.1% for secondary and 25.3% for tertiary education (United Nations Development Report 2011).

Because the increasing number of foreign companies the demand for speakers of English has increased, too. For that reason Costa Rica simplified procedures for immigration, for work permits, and for domestics for technics and managers of foreign companies. In addition, the government is currently adopting programs to improve the level of English of the Costa Rican population. The government introduced "Costa Rica Multilingual": currently 13,000 people graduated from English course, and 20,000 people are enrolled in English courses in language institutes. The goal of the program is to have 100% of high school graduates on B1 – C1 (European framework) English level (CINDE). The University of Costa Rica (UCR) also teaches Mandarin Chinese to anticipate on the new market.



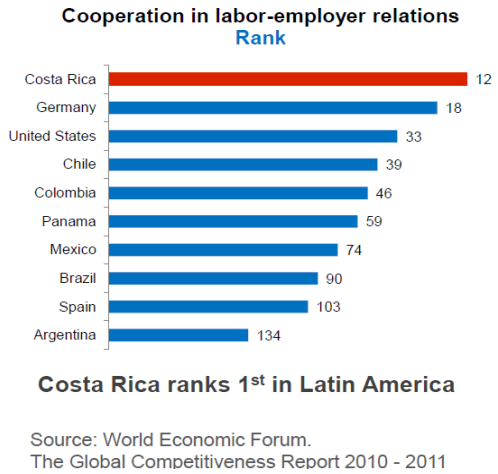
Although Costa Rica ranks relatively well on educational enrollment, the issue of a relative low enrolment rate at tertiary education is a concern for the country. The Global Innovation Index ranks Costa Rica with a score of 36.3 out of 100 on the 60th place globally, and third in the Latin American region after subsequently Chile and Brazil. One of the themes receiving a low is human capital and research due to the low ranking in particular the tertiary education enrolment. Considering the human capital shortage, there might be space on the Costa Rican market for a phenomenon that is unknown not yet fully developed in Central America as it is in for example Europe: job agencies, where people can walk in and encounter all kinds of different work.



Issued diplomas by area of studies 2009 (source: MICIT 2012)

CINDE's Director of International Relations, Pilar Madrigal, explained all the specific initiatives that Costa Rica is carrying out to further strengthen its competitiveness and to support the growth of the medical device cluster in the country: "When people speak about Costa Rica, they mainly refer to the reduction of labor costs, but the great advantage is that Costa Rican people are a young, loyal, passionate, and highly qualified work force. Managers are always mentioning how when they move their operations and assembly lines from other locations to Costa Rica they find a level of maturity that enables them to implement and adapt in less than six months. Costa Rica's labor pool is driven to improve and exceed the expectations and that is definitely a superior advantage that the country has".

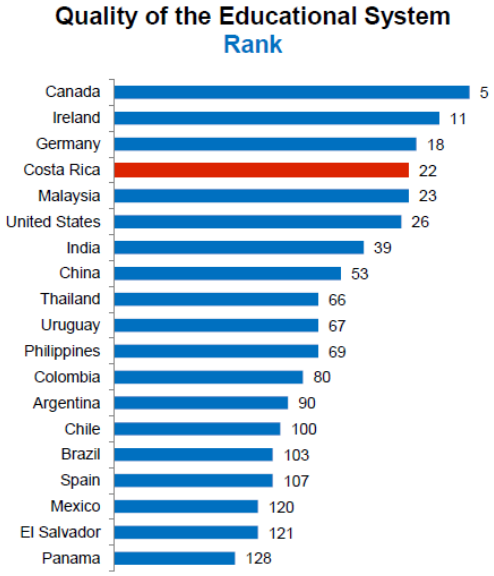
Stable employer-employees environment: "Asociación Solidarista"



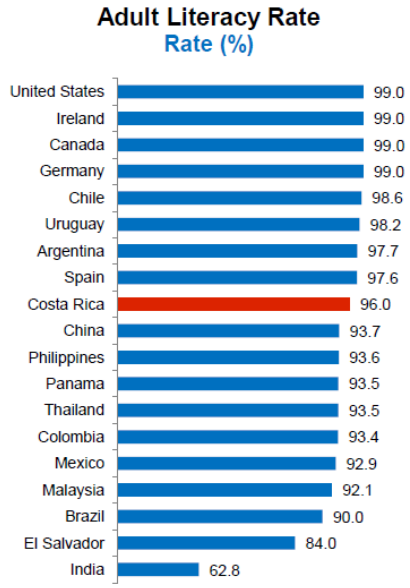
Costa Rica ranks 1st in Latin America

Source: World Economic Forum.
The Global Competitiveness Report 2010 - 2011

- Employer-sponsored workers' association: operates as a credit union, providing multiple benefits to the employees, who can participate voluntarily
- Both employer and employees contribute to the fund
- They are not sector-wide bargaining instances, unlike American unions
- **97% of the companies in the private sector have the "Asociación Solidarista".** This high level of participation is a particular tendency in Costa Rica
- There are some similarities to a 401(k) retirement plan, without the stock options



Source: World Economic Forum.
The Global Competitiveness Report 2010 - 2011



Source: United Nations.
Human Development Report 2010

Due to the appreciation of the Costa Rican currency, the higher demand for qualified labor and high social costs, the demand for innovation, productivity and sustainability is rising fast, especially in the agricultural, food-processing and high assembly sectors. This signifies possible opportunities for Dutch suppliers within these sectors.

3.2.7 Innovation

According to the Global Innovation Index (by INSEAD) Costa Rica ranks 45 of 125 countries with 39,9 of the 100 credits. Besides human capital which relates to the limited enrollment rate at tertiary education as discussed earlier, two other issues influence the relatively low ranking of Costa Rica:

- Human capital & research (33.1)
- Market sophistication (32.7)
- Scientific outputs (28.4)

Market sophistication is an issue for investment. The possibility to get investment for business is limited. The low ranking on scientific output is mainly due to the lack of knowledge creation. This issue refers to the process of getting a patent, which is a hard and long process in Costa Rica, and usually takes more time than the indicated 5 years. Costa Rica is a signatory of many major international agreements and conventions regarding intellectual property. Building on the existent regulatory and legal framework, DR-CAFTA required Costa Rica to further strengthen and clarify its IPR regime, with several new IPR laws added to the books in 2008. The GATT agreement on Trade Related Aspects of Intellectual Property (TRIPS) took effect in Costa Rica on January 1, 2000. Costa Rica ratified the World Intellectual Property Organization (WIPO) "internet treaties" pertaining to Performances and Phonograms (WPPT) and Copyright (WCT) in 2002. In August 2009, Costa Rica modified its WPPT commitments in a way consistent with its international obligations by notifying the WIPO of its reservations to Article 12 of the Rome Convention and Article 15.1 of the WIPO Performance and Phonograms Treaty (WPPT). These reservations together with a subsequent modification of Costa Rican law effectively exempt Costa Rican over-the-air broadcasters from payment of "neighboring rights" to music performers and producers.

While the legal framework governing intellectual property is basically in place, Costa Rica does not adequately enforce those rights. In 2010 Costa Rica remained on the Watch List in the United States Trade Representative's (USTR) annual Special 301 Report. Significant delays in judicial proceedings and a lack of official investigators, public prosecutors, and criminal and civil judges specializing in intellectual property continue to hamper effective enforcement.

Information on innovation and human capital with a focus on the medical equipment sector will be given in the next chapter.

3.2.8 Establishment of a business

In Costa Rica, all private entities and persons, domestic or foreign, may establish and own businesses and engage in all but a few forms of remunerative activity. The exceptions are in sectors that are reserved for the state (legal monopolies) or that require participation of at least a certain percentage of Costa Rican citizens or residents (electrical power generation, broadcasting and professional services).

Notwithstanding the positive aspects mentioned earlier on in this report on establishing a business in Costa Rica, according to the Ease of Doing Business Index starting a business Costa Rica ranks 122 out of 183 countries. The low rank is caused by the lengthy process of procedures which is also slightly longer than the average of Latin America. The Global Competiveness Index mentions that the most problematic factors for doing business in Costa Rica are the inefficient government bureaucracy, the inadequate supply of infrastructure, and the access to financing. This has hampered the flow of investment and resources badly needed to repair and rebuild the country's public infrastructure, an infrastructure which has deteriorated over the years from a lack of maintenance and new investment. Enforcement of intellectual property laws has been lacking in many cases, due to insufficient resources and training, and weaknesses in the country's criminal code. These areas in addition to the macroeconomic imbalances seen in its high budget deficit and inflation make it cumbersome to start a new business. Scarcity of business loans and equity finance are the most important constraints to the country's competitive potential. The situation is expected to improve as CAFTA-based commitments take hold.

	Ease of Doing Business Rank	Starting a Business	Dealing with Construction Permits	Getting Electricity	Registering Property	Getting Credit
Singapore	1	4	3	5	14	8
Netherlands	31	79	99	67	48	48
Chile	39	27	90	41	53	48
Panama	61	29	71	15	120	48
Guatemala	97	165	151	30	23	8
El Salvador	112	136	144	130	54	48
Nicaragua	118	130	150	136	122	98
Costa Rica	121	122	141	43	46	98
Brazil	126	120	127	51	114	98
Honduras	128	150	70	114	94	8

	Protecting Investors	Paying Taxes	Trading Across Borders	Enforcing Contracts	Resolving Insolvency
Singapore	2	4	1	12	2
Netherlands	111	43	13	28	7
Chile	29	45	62	67	110
Panama	111	169	11	119	83
Guatemala	133	124	119	97	101
El Salvador	166	146	69	66	88
Nicaragua	97	155	83	52	78
Costa Rica	166	138	73	129	121
Brazil	79	150	121	118	136
Honduras	166	140	103	177	131

Source: Doing Business Report, 2011 (www.doingbusiness.org).

Michiel van Rossum, director of SIRE, a company based in San José Costa Rica that imports medical equipment from Europe for the Costa Rican market, and which assists European companies exporting to or basing in Costa Rica, confirms that establishing a business and registering a company and/or products is a slow, difficult and costly process in Costa Rica. To actually 'break through' within the Costa Rican market you have to prove your quality and consistency over a longer period of time. Whereas Costa Rica has many advantages in comparison with other countries, its bureaucracy is definitely something that is not easily overcome.

For more information on setting up a business in Costa Rica, please visit the following websites of the Royal Dutch Embassy in Costa Rica and the Costa Rican investment company CINDE:
http://www.handelswijzer.com/
http://www.cinde.org/en/setting-up-a-business-in-costa-rica

3.2.9 Incentive programs

In Costa Rica there are three investment incentive programs operate: the free trade zone system, a so-called active finishing regime, and a duty drawback procedure. In the following part these incentive programs are described. All are available equally to foreign and domestic investors. These incentives include tax holidays and training of specialized labor force.

Individual companies are able to create industrial parks that qualify for Free Trade Zone status by meeting specific criteria and applying for such status with Costa Rica's Foreign Trade Promotion Authority (PROCOMER). Presently, there are 256 companies active under the Free Trade Zone regime

in Costa Rica. Free Trade Zones operate near the port cities of Limon/Moin (Caribbean) and Puntarenas (Pacific) as well as in various central valley locations in the area of San José. Companies in Free Trade Zones receive exemption from virtually all taxes for eight years and at a reduced rate following that period. For example, there is a 100% exemption of import rights for raw materials, equipment and components, export taxes, local sales taxes, excise taxes and profits repatriation taxes. There is a minimum investment of US$ 150,000 inside free trade industrial parks, outside of them the minimum investment is US$ 2,000,000.

In addition to the tax benefits, companies operating in Free Trade Zones enjoy simplified investment, trade and customs procedures, which provide a convenient way to avoid Costa Rica's burdensome business licensing process. The tax holidays provided for investment in Free Trade Zones manufacturing companies are scheduled to phase out in accordance with World Trade Organization (WTO) agreements by 2015, to be replaced by Law 8794 which eliminates explicit export incentives and replaces them with favorable tax treatment of specific types of company or organization. The WTO-mandated change does not apply to those companies that export only services. Call centers, logistics providers, and software developers are among the companies that may benefit from Free Trade Zone status but don't physically export goods. Such service providers have become increasingly important participants in the free trade zone regime.

The active finishing regime, created by decree in 1997, suspends taxes for renewable one-year periods on imported inputs of qualifying companies, and then exempts the inputs from those taxes when the finished goods using or containing them are exported. The regime also facilitates a five-year renewable suspension of taxes on capital goods used to manufacture exported goods. Companies within this regime may sell to the domestic market if they have registered to do so and pay pro rata import duties on capital equipment used for the domestic market. The drawback procedure provides for rebates of duties or other taxes that have been paid by an importer for goods subsequently incorporated into an exported good.

While Costa Rica does not impose requirements that foreign investors transfer technology or proprietary business information or purchase a certain percentage of inputs from local sources, the Costa Rican agencies involved in investment and export promotion do explicitly focus on categories of foreign investor who are likely to take such actions while encouraging local supply chain development and cooperation with local universities. While the procedures necessary to obtain residency in Costa Rica are traditionally long and very bureaucratic, immigration officials believe that an immigration law that took effect in March of 2010 and Costa Rica's accession to the Apostille Convention, in effect as of December 2011, make the process less burdensome. In any case, existing immigration measures do not appear to have inhibited foreign investors' mobility to the extent that they affect Foreign Direct Investment in the country.

Main requirements (1)	(f) Manufacturing firms under Law 8794	
	Small / mid scale projects	Large scale projects
Minimum export level	Not required	Not required
Belong to a strategic sector (2)	Yes	Yes
Minimum employment level	Not required	100
Minimum required investment	US$150,000 (3)	US$10,000,000 (4)

Income Tax Incentives	Period of Time	(f) Law 8794 Small / mid scale projects*	(f) Law 8794 Large scale projects*
Income tax (statutory income tax = 30%)	8 years	6%	0%
	4 years	15%	15%
Income tax credit	No limit	10%	10%
Income tax deferral	No limit	Not available	Up to 10 years

Other Incentives	Period of Time	(f) Law 8794 Small / mid scale projects	(f) Law 8794 Large scale projects
Import duties	No limit	100% exemption	100% exemption
Excise taxes	No limit	100% exemption	100% exemption
Remittances repatriation tax	No limit	100% exemption	100% exemption

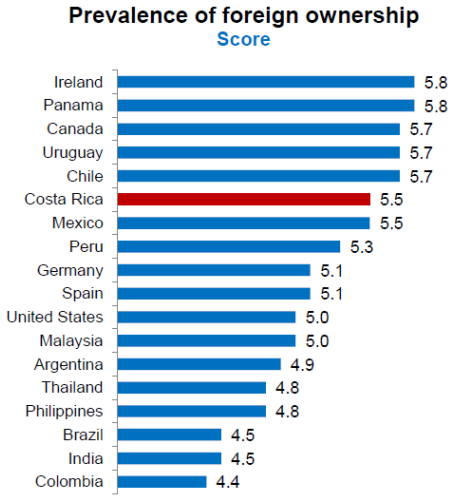
* Additional 8-year renewal may be granted if significant reinvestment is made (Article 20 bis)

Costa Rica taxes/others	Statutory	Free Trade Zone Regime
Corporate income tax	30%	Free Zone holiday for full / partial income tax exemption for 8 / 4 years* with the possibility of renewing this exemption period multiple times upon reinvestment
Custom duties on imports/exports	Varies depending on product	100% exemption
Sales tax	13%	100% exemption on local purchase of goods/services
Stamp duty	1%	100% exemption
Property taxes	0.25%	100% exemption for a 10 year period
Property transfer tax	1.5%	100% exemption for a 10 year period
Municipal patent license	0.3%	100% exemption for a 10 year period
Withholding tax on royalties, fees, dividends	up to 25%	100% exemption
Tax on interest income	8%	100% exemption
Limitation on expats in country	None	
Tax on expats	All Costa Rican residents and non-residents working within the Costa Rican Territory under a labor relationship are subject to withholdings and social security contributions. Personal income tax goes up to 15%.	
Job creation and training grants	Free customized technical training available through INA	

Concerning legal security, foreigners have no limits of property handling and they can drive business activities freely. Foreigners have constitutional equality of rights and obligations, there is free capital movement and intellectual property laws in Costa Rica are in accordance with WTO Guidelines.

- Foreigners have no limits to property handling and they can conduct business activities freely

- Free capital movement, no foreign exchange controls



Source: World Economic Forum.
The Global Competitiveness Report 2012 - 2013

- **It is guaranteed by the National Constitution**

- **Modern protection mechanisms meet international standards**

- **Protected areas include**
  - Copyrights
  - Trade Marks
  - Encrypted Program-Carrying Satellite Signals
  - Industrial Designs
  - Patents
  - Geographical Indications

- **IPRI measures 3 core components**
  - Legal and Political Environment
  - Physical Property Rights
  - Intellectual Property Rights

Source: Property Rights Alliance 2012

Furthermore, foreigners and locals have equal rights and obligations: foreigners have no limits to property handling and they can conduct business activities freely. Costa Rica offers free capital movement with no foreign exchange controls. Multinational companies must comply with the same procedures and regulation as local companies to start operations in the country. However, CINDE offers assistance to foreign investors through a 'fast track' that allows them to set up a new operation in Costa Rica in about 6-8 weeks. CINDE's After Care department provides this assistance provides this assistance at no cost within the package of activities related to immigration processes for expatriates, utility service requests, telecommunications service request, permits from the Ministry of Health and environmental authorities, among others. CINDE makes it easier for multinational

companies to contact local suppliers involved in the set up process of the new operation in the country. Specific services provided by corporate law firms, immigration law firms, tax and accounting advisers, labor law advisers, recruitment / payroll firms, relocation / housing companies, banks, logistic firms, environmental advisers, construction / design companies, construction managers, facility services, office furniture companies and communication agencies.

3.2.10 Migration

Currently it is hard for companies to acquire employees from abroad. This is especially the case for Small and Medium Enterprises (SMEs) as they do not have the opportunity to close special deals with the government regarding this issue as MNCs can do. However, the Costa Rican government expressed that the regulations will be adapted to make this process easier; this way, highly educated employees from abroad can easily start working in Costa Rica irrespective of the size of the company.

Some regulations are already in place: there is no limit as to the number of expats any company wants to hire in its Costa Rica operation. Furthermore, the General Directorate of Immigration and Aliens has a fast-track system that facilitates procedures for companies in order to hire expats. In addition, companies may request their acknowledgement before the General Directorate so as to speed up residence procedures of its expatriate employees in Costa Rica. This acknowledgement allows their residence request to be handled directly from Costa Rica and not from abroad.

4 Medical equipment sector profile

This section provides more detailed information about the medical equipment sector in Costa Rica. First, a description of the used definition in this report is established, after which an outline of the historic and economic details of the Costa Rican medical equipment sector is given. After this several essential issues for investments in the sector are discussed; employment and human capital, innovation, infrastructure, incentives and organizations. It is important to already notice here that there are three different growth sectors which are interesting. The public sector in Costa Rica (government controlled CCSS), where demand for higher quality health care has been higher because of an increased income per capita and an ageing population and where there lie possibilities for Dutch exports because the CCSS is spending a lot of money on new facilities and new equipment, the sector of medical tourism and the high tech assembly export sector.

4.1 Definition and general background

The medical equipment sector encompasses a range of products and activities that are used and applied in various areas in the economy and society. Therefore, to allow us to establish a clear picture of the medical equipment sector this paragraph provides us with a definition of it. Medical equipment is hereby defined as every medical device that in order to function is dependent on energy, via the lighting system or with batteries. Medical equipment is present in every health institution (which is to say, where people are being cured and being taken care of), and almost always gets used more often. Another characteristic of medical equipment is that is active: the device will execute an activity when controlled in order to support, research or treat. Where possible this definition is being followed in this research. However, because not all the institutions use the same concept the definition might vary. Throughout the report it will be indicated if a different definition is being used. The previous chapter indicated that the economic growth of Costa Rica is mainly demand driven by exports. The main contributing sectors to this demand are the manufacturing sector, the services sector, and the life sciences sector. The medical equipment sector overlaps with all three of them. Therefore, when it is relevant attention is paid to these sectors, too.

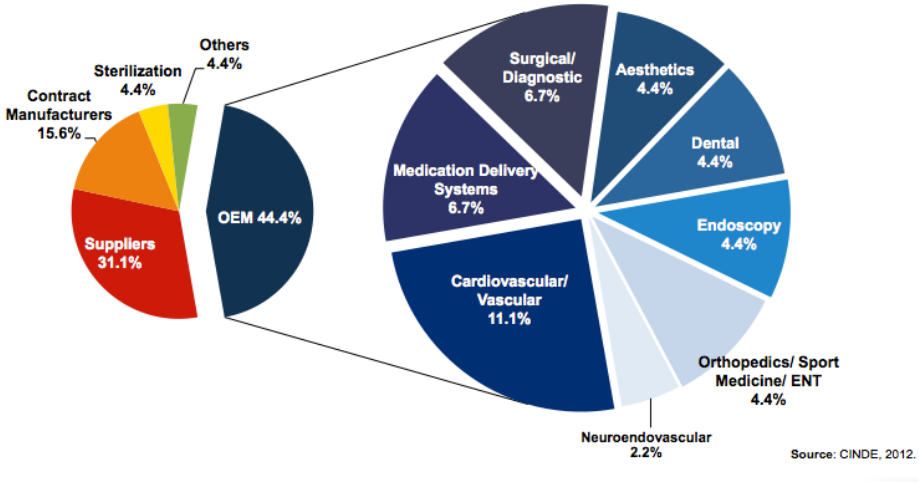
The health security system (Costa Rican Institute of Social Security: CCSS, or "*la Caja*," as it is popularly known), includes 30 hospitals: 10 general hospitals, 7 regional hospitals (1 in each geographic region/province), and 13 peripheral hospitals, which vary in size. 16 of the hospitals are located in the Central Valley region of the country, where about one-half of the population lives. Additionally, the CCSS is responsible for approximately 500 clinics, and approximately 1,000 small attention units with only basic equipment, known as "basic equipment and integral integration" (EBAIS), which provide basic medical assistance to patients in remote areas of the country. The public sector is responsible for buying around 90% of all medical equipment in Costa Rica.

The medical equipment sector began its development in Costa Rica in 1987, when Baxter Healthcare decided to establish a manufacturing operation. Employment went up from 1,500 to 13,561 and the sector has 50 companies including world leaders such as Hospira, Boston Scientific, St. Jude Medical, Hologic, Arthrocare, Allergan and Amoena. 92% of the installed companies in the country have their headquarters in USA. After 2000, the dynamism of the sector was evident. Costa Rica went from 8 companies in 2000 to 50 in 2013. Six of those 50 companies are in the Top 20 largest Medical Devices firms. Today the medical sector has contract manufacturers, suppliers, sterilization companies, aesthetics companies, endoscopy companies, medical delivery system companies, neuro-endovascular company, and cardiovascular world class companies offering their services, among others. The great

variety of tasks, performed by medical devices companies, is evidence of the country's potential for establishing operations.

There exists a great variety in medical devices. They are being divided in many sectors and subsectors. The main subsectors in the medical services industry in Costa Rica are: medical device companies, medical device contract manufacturers, suppliers, sterilization, and others. The largest sub sector in the medical device arena is the cardiovascular/vascular, followed by surgical and diagnostics. There are an important number of medical contract manufacturers operating in ISO 7 and 8 clean rooms, providing a wide range of services from product design to through manufacturing, packaging and sterilization.

Medical Device companies in Costa Rica



Costa Rica is not only the second largest medical devices exporter in Latin America, but one of the best locations for high technology operations in the world. According to the U.S. Department of Commerce market prospects of Costa Rica are excellent in the following sectors: building products, hotel and restaurant equipment, and medical and dental equipment. Further growing of the sector seems to be assured by a growing population, a sharp rise in income, a raise in the percentage of people with a health insurance and a higher demand for high quality; the CCSS is buying more every year. The number of small, private clinics is growing constantly, as the population is demanding quicker and better health services. The influx of foreigners, mainly from North America (U.S. and Canada), is also contributing to this private growth, in what is often known as medical tourism.

At the moment there is no coordinating syndicate or other type of organization that is promoting the interests of the sector or the several producers together. The fifteen bigger companies, all of them of foreign origin, have been discussing the idea funding such an organization, but until today this idea remained in the fridge.

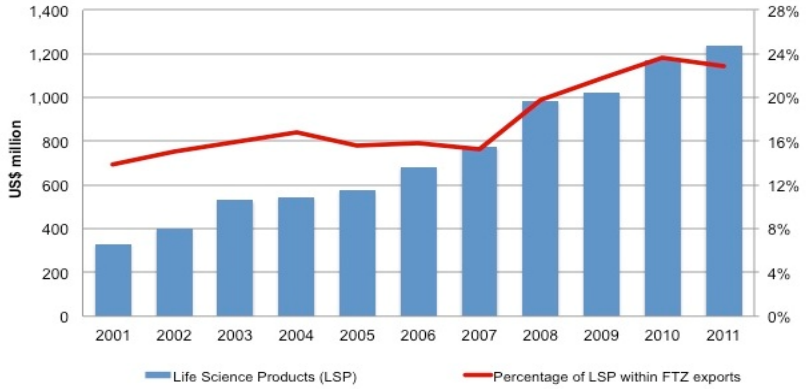
Michael Rousseau, Group President of St. Jude Medical, said the following: "St. Jude Medical has chosen Costa Rica as an expansion site because of its robust business environment, talented workforce and its strategic location in an area where we see strong growth potential. We appreciate the opportunity to do business in Costa Rica and look forward to a mutually beneficial relationship. We picked Costa Rica to build a new plant because this country offers a skilled, well-educated population, and that is very important for us. We view it as much as an investment in people as in facilities."

4.2 Economic characteristics medical equipment sector

Costa Rica has positioned itself as a low risk, cost competitive location, for manufacturing operations, especially in medical devices. The medical equipment sector plays an important role in Costa Rica's economy. The medical equipment sector in Costa Rica was established in the 1980s and is now the fourth most important export sector of the country. The investment ratio is 3:1 which indicates that companies see great possibilities. The export that is directed to Europe, with the Netherlands as the most important transit country, receiving about 40% of all export to the EU from Costa Rica, increased strongly when the US company BeamOne started sterilizing the medical equipment on Costa Rican soil, causing that the products can now be directly exported to Europe.

In 2011, exports of medical devices accounted for 3.0% of the country's GDP; and represented 11.8% of the total exports of goods (US$1,239.2 Million). Most production is set to be exported. With respect to the fact that medical equipment needs frequent replacement it is expected that the sector will continue to grow. Especially in Europe the demand is growing which is a consequence of the ageing population. Main competitors on the market are the United States of America, Finland, Japan, Spain and the United Kingdom. The Free Trade Zone exports of this sector have grown at an annual average of 8.6% annually since from 2001 to 2011.

Costa Rica: Exports of Medical Devices



Source: CINDE based on data from PROCOMER

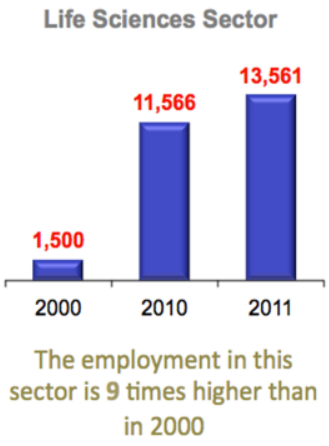
The composition of exports of Costa Rica as is shown below indicates that three quarters of the exports are made out of industrial products. Of these industrial exports, the electronic products and the medical devices make up for half of the exported industrial products. Since the 1990s traditional export products which contributed mainly to GDP like coffee and banana have been surpassed by manufacturing and industry's contribution to GDP. Although most companies produce for the United States market, a couple of companies produce for the EU market. The possibility of offering their services online and the fact that these companies are active in specific niche sectors such as migration services attracts customers from all over the world.

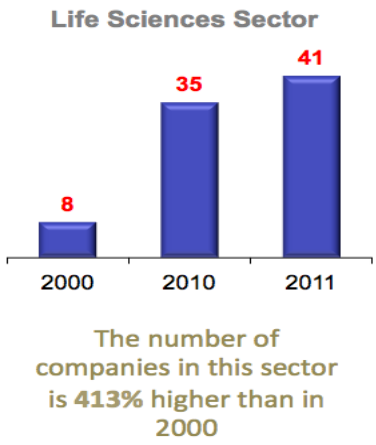
Composition Export Costa Rica (source: PROCOMER)

Costa Rica: Composition of exports according to sector (2011, millions of US$)			
Agriculture	2389,4 (22.8%)		
Fishery	261,9 (2.4%)		
Industrial	7850,7 (74.8%)		
		Electronics	2669,2 (34%)
		Medical devices	1256.2 (16%)

The related life sciences sector in Costa Rica has grown 375% over the past 10 years and its 50 companies employ more than 13.000 people. In 2010 this sector exported US$1,101 million. The medical devices sector is the fourth biggest exporter ($1,2 billion) in the country, its exports have grown 3 times faster than the rest of free trade zone exports. According to PROCOMER, the Costa Rican Center for Export Promotion, affiliated with the Costa Rican Foreign Trade Ministry, this sector exported mainly to the U.S. market. The market size for medical equipment and supplies has remained relatively stable during the past two years (2010-2011). Figures for imported medical equipment and supplies are similar to those of the market size, since amounts in local production and exports have remained very similar in both years.

In the last 5 years (2006-2011), the investment of medical devices companies has represented around 50% of the total FDI generated by Free Trade Zone companies. It is responsible for more than 13,000 jobs, 9 times higher than it was a decade ago. The following figures depict the trend and growth experienced by the sector in the period between 2000 and 2011.



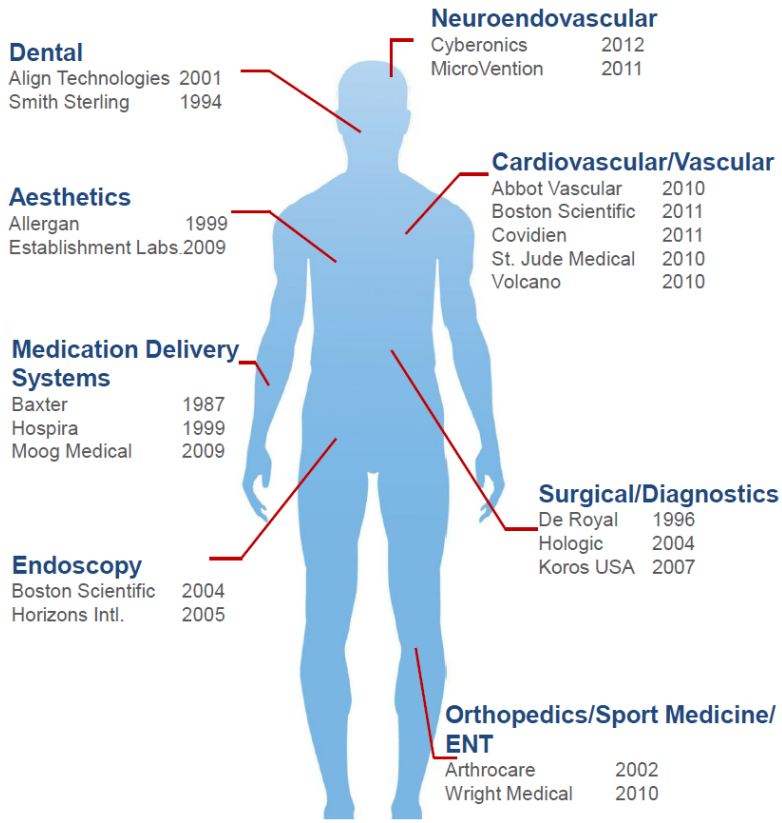


Source: CINDE, 2012

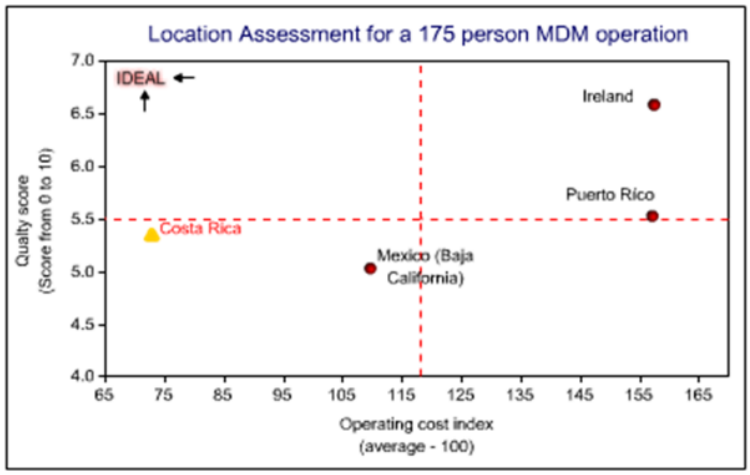
The United States is the largest exporter of medical equipment to Costa Rica, with US$19.3 million in 2004 and US$ 21.6 million in 2005, accounting for an average market share of Costa Rican imports of roughly 50.0 per cent. Major U.S. competitors in this sector are Germany, with 6.6 per cent market share of Costa Rican imports; Japan 4.8 per cent; and Brazil (3.6 per cent). There is no significant local production of medical equipment that is consumed directly in Costa Rica. High quality, reliability, durability, favorable prices, good maintenance service, and timely delivery are the main factors for increasing U.S. sales in the medical sector. Since 2000 the number of companies in the services sector

increased with 2160%. The different types of companies classified in this sector are: shared services, entertainment and media, engineering & design, architecture and construction, contact centers, and back office.

Of the currently operating companies, over 40 were founded during the last decade. In the next figure you can see in what year some of the larger medical device companies were established in Costa Rica, and what is the main focus of their products. From 2000 to 2011, the number of companies in the industry experienced annual growth of 19%; 413% higher than 11 years ago. This growth has not decelerated despite of the global economic crisis. At the contrary, after the settlement of many new companies in 2012, at the start of 2013 another new medical equipment company set foot in Costa Rica, Sterigenics Inc., a company that is specialized in the sterilization of medical equipment, material and aliments. Their headquarters is in Illinois, USA. The industry has not been negatively affected by the changes in regulatory environment in the USA.



IBM and OCO Consulting conducted a benchmarking which included Costa Rica and other locations and used actual medical devices manufacturing projects. These results show that Costa Rica is very well positioned for medical device companies, due to combination of good quality levels with competitive operating cost and a favorable tax environment.



Many local companies are currently benefiting from providing medical equipment companies with their necessary supplies, a factor that has allowed Costa Rica to constantly improve its local supply chain. Another supporting factor is the fact that imported medical equipment and supplies are exempt from custom duties. In the sector of medical equipment state firms operate, but that does not preclude private sector competition, which generally receives equal treatment to state companies. On the other hand, pharmaceuticals, drugs, cosmetics, medical devices and some chemical products, such as solvents, agricultural inputs and precursor chemicals used to produce narcotic drugs, must have import permits (valid for five years) from and be registered by the Ministry of Health. The Costa Rican Institute of Social Security (CCSS) Procurement Department requires bar code identification in all purchases of medicines and medical supplies upon entry in the Costa Rican market. This requirement is included in the specifications of all public and private tenders issued by the CCSS for the acquisition of medicines and medical supplies.

4.3 Research & Development

In Costa Rica there is research & development, however, investments for innovation by the Costa Rican state are limited. In total 2.26% of GDP (2009) goes to science and technology and 0,54% of GDP to Research & Development (R&D). The R&D allocation was around $250m during 1990–2000.

After a complaint was filed at the Constitutional Court (Sala IV) about research in the country, it became necessary to issue a new law for this sector. Until now no new law was formulated. The only executive degree that did come into existence is one that stresses the importance of research (N.36952). It declares the investigation, development, and production of medical and biotech devices on national territory to be of public and national interest. As a consequence, several universities do have their own research & development departments. However, regarding market sophistication, investment remains an obstacle. The possibility to get investment for business is limited, and for the medical equipment sector there are no specific funds available. For that reason, research & development is practically absent in the medical equipment sector.

A fiscal deficit, the fact that Costa Rica in some respects did not yet reach the connotation of 'first-world-country' and the lack of capacity are also causes that research & development did not develop in this sector yet. A training platform to facilitate the insertion of new talent into the industry as well as the strengthening of current workers' capabilities by creating customized training programs could force a break-through. A new, to-be-executed, initiative is called "Medical Device Training Center" (MDTC). It will aim at training national and international students especially for this sector.

CEGESTI, a private non-profit organization that promotes sustainable development in Latin America, referred to other weaknesses preventing the research & development of developing: bureaucracy and the lack of a regulatory framework in Costa Rica prevent the registration of patents, a huge default for the medical equipment sector. There is little capacity for developments and there is no culture of working with interdisciplinary devices and a long term vision. Furthermore, there is a lack of adequate financial instruments, not of money. The sector is wrongfully considered non-strategic and there are not enough means for improving the innovation processes of companies in general.

However, the government intends to increase its spending on R&D in the years to come. According to the UNESCO Institute for Statistics, R&D spending in Costa Rica amounted to around 0.4% of GDP in 2009. Last year the government adopted the National plan of Science and Technology for 2011- 2014. The goal of the plan is to better allocate the financial funds of the Ministry of Science and Technology (MICIT). Some of the goals are: invest 1% of the GDP in R&D by 2015, incentivize private investment in R&D, double the number of graduates in Masters and PhD's programs in 5 year's time, double the percentage of students enrolled in scientific and technological careers, and create an investment fund that incentives the development of Science, Technology, and Innovation. These are all issues that focus on strengthening the national system of innovation, and the strengthening of human capital to meet the demand of the sector.

In addition, there are some successes in the related sector of life sciences. The local company BioTD was given the price at the "Innovation Competition 2012" by Grupo Softland. BioTD is a company that is searching for innovative solutions for the prevention, detection and curing of several diseases, such as cancer. Furthermore, there is the National Center of Biotechnology Innovations (CENIBiot), which was created in 2009. It is based on the collaboration between the Government of Costa Rica and the European Union. It contributes to the competitiveness of agro industrial companies by scaling-up added-value biotechnology innovations.

4.4 Medical Tourism

70% of the private clinics receive medical tourists throughout the whole year. In 2011 almost 50.000 of them visited Costa Rica. On the average they spend around 7000 US$. The income of this industry is estimated at 337.7 million US$, which is more than 9 months of exporting coffee. Moreover, medical tourism is forecasted to triple within the next 3 years to $ 800 million. These numbers are taken from the *Consejo para la Promoción Internacional de la Medicina de Costa Rica* (PROMEDOR). In 2010 the amount of medical tourists was 'only' 36.000, which was already 20% more than in 2009. This is not only because of low prices in Costa Rica; the high service standard and the international accreditations support the process. With the newly introduced 'Obama-care' in the US the potential for Costa Rica got even bigger; health insurance companies in the US are now able to include medical trips in their packages.

It is expected that the income of the medical tourism in Costa Rica will rise even stronger and end up around 800 million US dollar around 2015. At the moment, Costa Rica is the only country that receives a 100% accreditation by the JCI Joint Commission International. 30 clinics are recognized by both the AAAHC (Accreditation Association for Ambulatory Health Care) and the AAAASF (American Association for Accreditation of Surgery Facilities). The whole chain of value of medical tourism is strongly developed in Costa Rica, including housing, transport, recovery and health spas. The country definitely specialized in medical tourism. Costa Rica is competing with other countries in the medical tourism arena. Costa Rica appears to have an advantage because it is closer to United States and Canada, the principal sources of medical tourists, and because many professionals have had training in the U.S. Several North American insurance firms are looking at the prospects for insuring medical tourists in Costa Rica. Medical procedures cost less money, even including travel expenses, and offer shorter waiting times.

4.5 What is missing in Costa Rica's medical equipment sector?

Concerning the public sector, German Cabrera, engineer at the 'Direction of Institution Equipment' of the CCSS, mentioned that there are two different ways of determining the necessities of the medical facilities. First, the medical facilities communicate their necessities to the central level, CCSS. And the other way is that the CCSS sends technicians to the facilities to check the status of the equipment and report their findings back to the CCSS. So the CCSS develops projects that are based on the analysis of their technicians or on what the medical facilities indicate. The CCSS buys standard equipment, later the medical facilities can indicate what modifications and/or accessories they will need. Concerning the CCSS, unfortunately the new annual purchase list for 2013 is not yet published. This list will include some (or all) of the pending purchases of this year. Surely, at the moment there is not enough equipment available to satisfy all the demand. The waiting lists are pretty long for certain treatments or just research. Some waiting lists are more than a year, a solid proof of that there is still a lot of equipment missing. Selection is being done on the basis of tenders. The requirements are included in the specifications of all public and private tenders issued by the CCSS for the acquisition of medicines and medical supplies. It is possible to keep updated about current tenders via the following website: www.mer-link.co.cr and the website of the CCSS: www.ccss.sa.cr

All kind of medical equipment is still wished for in Costa Rica's public sector, such as ultrasound and X-ray devices, gamma cameras, operation tables, cleaning systems, boilers and electricity generators. According to CINDE products that are being wished for are mainly in the areas of molding (plastics), precision mechanics, cardiovascular and laboratorial products.

The following figure comes from reports of CINDE, offering an overview of their investments in the medical equipment sector over 2012.

Cantidad de Proyectos y Costo Estimado

Categoría	TOTAL PORTAFOLIO		Con financiamiento en el 2012		Programado en el quinquenio		Programado fuera del quinquenio	
	Cantidad	Costo total de los Proyectos	Cantidad	Inversión	Cantidad	Inversión en el quinquenio	Cantidad	Costo
Infraestructura	115	400,250	17	26,299	85	252,416	30	100,958
Equipo Médico	45	40,321	21	4,232	37	17,526	8	11,975
Equipo Industrial	60	15,971	4	550	49	11,319	11	4,609
Tecnologías de Información	30	94,357	16	2,437	28	83,216	2	5,945
Gestión local	11	393	11	393	11	2,169		
Otras inversiones 2012				6,395		35,336		
TOTALES	261	551,292	69	40,305	210	401,983	51	123,487

The following figures come from the buying plan of the CCSS for the next year(s) and thus offer an insight in what products are necessary in Costa Rica's public sector.

Equipo médico

Nº	Proyecto	2012	2013	2014	2015	2016	Costo total	Total 2012-2016	Recursos
1	Ampliación 1°Fase Ventiladores Pulmonares (10)	1					585	1	GIT
2	I Fase Reposición Equipos Rayos X (10) 2008LN-000006 Cont. P-5526-2009	33					2,300	34	GIT
3	Procesadoras Placas Rayos X (22) 2009LN-000002	2					175	2	GIT
4	Ortopantógrafos (5) 2009LN-000003	4					461	4	GIT
5	Equipos Rayos X Portátiles (30) 2009LN-000008	51					845	51	GIT
6	I Fase Reposición Ultrasonidos (12) 2009LA-000033	1					592	1	GIT
7	II Fase Ventiladores Pulmonares (97) AH1N1 2009CD-000218	3					1,575	3	GIT
8	Mamografía	538					538	538	PFRO
9	Contador de radiaciones Gamma de Pozo, PFRO	26					26	26	PFRO
10	Equipo de Corte (Estación de corte), PFRO	53					53	53	PFRO
11	Laparoscopio, PFRO	551					551	551	PFRO
12	Nasoendoscopio flexible con sistema de captación, PFRO	131					131	131	PFRO
13	Unidad teñidora de tejidos, PFRO	53					53	53	PFRO
14	Ablación por Hipertermia HSJD, PFRO	32					32	32	PFRO
15	Ablación por Hipertermia y ultrasonido transoperatorio HCG, PFRO	55					55	55	PFRO

Equipo médico

Nº	Proyecto	2012	2013	2014	2015	2016	Costo total	Total 2012-2016	Recursos
16	II Fase Proyecto Ultrasonidos (36) 2008LN-000015	870	20	5			1,800	895	GIT
17	I Fase Unidades Dentales (53) 2008LN-0000017	9	16	3			615	28	GIT
18	II Fase Equipos Rayos X (9) 2009LN-000001	741	44	22			2,500	806	GIT
19	I Fase Autoclaves Propósito General (24) 2009LN-000014	19	5	3			615	27	GIT
20	Gammacámara (2)	649	36	36			721	721	GIT
21	Mesas Cirugía (20)	410	23	23			455	456	GIT
22	I Fase Autoclaves Propósito General (2) Reposición 2009LN-000014		8	6			150	13	GIT
23	Tomógrafos Helicoidales Regionales (3)		820	1,640	245		2,695	2,705	GIT
24	III Fase Ventiladores Pulmonares (Ampliación capacidad instalada) 25			520	14	14	548	548	GIT
25	II Fase Unidades Dentales (30)			428		23	450	450	GIT
26	II Fase Autoclaves Propósito General (25)			630	35	35	700	700	GIT
27	Incubadoras Gabinete Fase I (25)			326	18	18	362	362	GIT
28	Incubadoras Cuidados Intensivos Fase I (15)			275	16	16	306	306	GIT
29	Incubadoras Transporte (30)				270	15	300	285	GIT
30	I Fase Lámparas Cirugía (25)				203	11	225	214	GIT
31	Simulador (1)				509	28	565	537	GIT
32	Equipos Angiografía Digital (2)				1,485	83	1,650	1,568	GIT
33	II Fase Mesas Cirugía (20)					665	700	665	GIT
34	III Fase Equipos Rayos X (9)					3,135	3,300	3,135	GIT
35	Incubadoras Gabinete Fase II(25)					326	362	326	GIT
36	Incubadoras Cuidados Intensivos Fase II (15)					275	306	275	GIT
37	Gammacámaras (2)					971	1,050	971	GIT
	Sub Total Equipo Médico	4,232	971	3,915	2,793	5,614	28,346	17,527	

Equipo médico

Nº	Proyecto	Costo total
1	II Fase Lámparas Cirugía (25)	225
2	IV Fase Equipos Rayos X (10)	2,500
3	V Fase Equipos Rayos X (10)	2,400
4	Máquinas Anestesia (50)	2,300
5	III Fase Autoclaves Propósito General (30)	1,400
6	Autoclaves Baja Temperatura (20)	925
7	III Equipo Resonancia Magnética	1,650
8	Equipos Mamografía (8) Reposición	575
	Sub Total Equipo Médico	11,975

Making a switch to the private sector; in an interview with Abel de la O Benavides, director of supplies of private clinic 'Bíblica' in Costa Rica, he explained that medical equipment is mainly bought through local representatives, because of logistical advantages and guarantees. At the moment they work together with mainly Elvatron (Philips Medical Care) and Nutricare. Clínica Bíblica takes care of its own supplies; there is no cooperation with other hospitals. It is due to experience that the clinic does not want to import equipment directly from abroad, communication is harder and products arrived late at times. For that reason, to export products to Costa Rica, it would be very important for Dutch companies to appoint a local representative and/or production plant in the country. Competition will be mainly with other international companies as there are few Costa Rican producers in the country.

Clínica Bíblica mentioned that they were not looking for alternative providers. This is confirmed by Baxter, one of the first and biggest producers of medical equipment in Costa Rica. However, there might be interest in innovative products. They try to keep updated about innovation via magazines, representatives, importers and commercial fairs. For example, there is a Dutch company, named Technology of Sense, that designed a small device that measures the percentage of sterilization in a certain room or of a certain other device. This kind of innovations would be interesting for a clinic like Clínica Bíblica and probably other hospitals in the country. Because the hospitals are quite general and do not have certain specializations, all types of innovations could be useful.

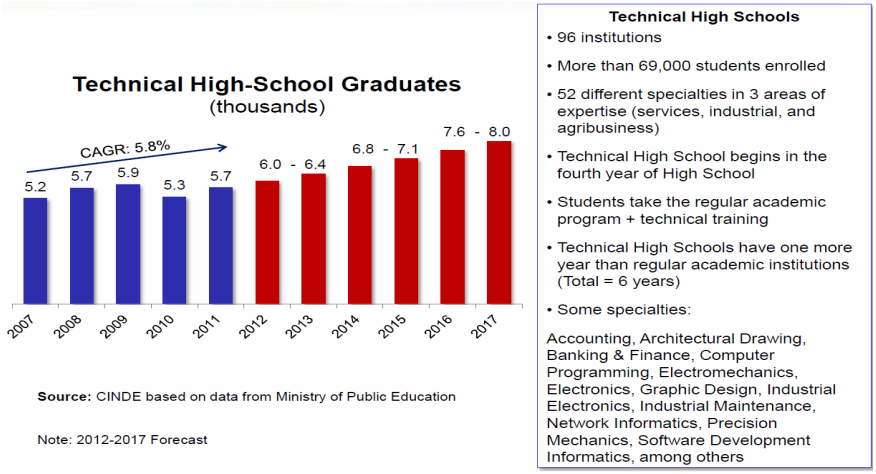
Interviews were also held with important manufacturers such as Hospira and Boston Scientific. Boston Scientific focuses especially on the production of devices for endoscopy, colonoscopy, electro physics, periphery interventions, cardiology and urology. The company mentions that the sector is lacking suppliers with high quality standards who want to develop their systems. In the area of metals, there are no local suppliers and there are only a few companies that are specialized in designing industrial equipment. Design of production equipment and projects to cut costs would complement Boston Scientific as well.

Hospira is drug-delivering company specialized in (bio) generics, medication management, IVZ systems and infusion pumps. Their facilities in Costa Rica and the Dominican Republic account for a large amount of the worldwide demand. The company, like most other large producing facilities of medical equipment in Costa Rica, is basically a US company. Almost all of its revenues come from the US and 90% of the equipment comes from the US. However, some molding equipment comes from Austria and Germany. Hospira is taking care of the quality of its products, but at the same time, since their products are usually disposal products, they have to be cost-effective. Hospira trusts on what is already familiar to them and what is local or from the US. However, would be interested in competitive products, such as filters and resin pallets. Costa Rica does not have the resources for this and the company expects any vendor that would enter the market aggressively with resin pallets could be very successful. Electronic components mainly come from China, whereas plastics come from the US. The company is trying to integrate plastics into its own producing process, but they are interested in different options for electronic components.

Packaging and sterilization are both done within their facilities. To encounter new innovations such as these, the company visits many fairs and other events where other companies present their equipment and innovations. As a consequence of such a fair, Hospira already moved its molding equipment activities to Austria and Germany. Usually the fairs that Hospira attends are mainly in the US; events in Texas and Chicago were especially mentioned. For more information on fairs in the medical equipment sector, see the annexes. They are open for any invitations for fairs in other parts in the world, but they signaled that most international companies also go to the US. R&D for Hospira is also mainly done in the US. Costa Rica, according to Hospira, has started to build up a R&D infrastructure but it's still in the beginning phase. For that reason Hospira is not so active in Costa Rica concerning R&D.

4.6 (Lack of?) Human capital in the medical equipment sector

After several companies demanded so, technical education was introduced at high schools. Within Costa Rica there are now 89 technical high schools at which 66,000 students are enrolled. Besides the regular academic program the pupils receive technical training.



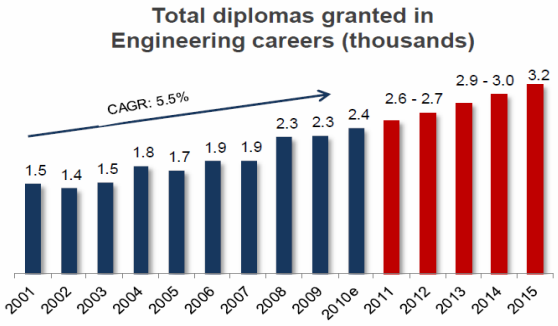
Moreover, educational programs are enhanced at the three major universities: ITCR, UCR and INA. As is shown below the majority of university students chose social sciences as a major which does not connect to the demand of the sector. A total of 13% of the students is enrolled in exact or engineering sciences.

Free training programs have been developed in order to address appropriately the requirements of both local and international corporations in specific sectors, therefore allowing Costa Rican technicians not only to work on the cutting edge of technology, but to maintain at the same time a productivity rate which is 20% higher than that of workers of other countries in the Americas.

- **Universidad de Costa Rica (UCR)**: Established in 1940. Largest university in the country
  - 7 campuses and 37,600 active students
  - Approximately 4,500 diplomas granted every year in 365 careers
  - Engineering School: Mechanical, Electrical, Industrial, etc.
  - Strong background in Life Sciences (academic formation and research labs)
  - Other careers including: Accounting, Business, Economics, Informatics, etc.
- **Instituto Tecnologico de Costa Rica (TEC)**: Established in 1972
  - 4 campuses and 8,000 active students
  - Approximately 1,500 diplomas granted every year in 23 different careers, including: Biotechnology, Business, Industrial Maintenance, Electromechanical, Electronic, Computer, and Environmental Engineering
- **Universidad Nacional (UNA)** : Established in 1973
  - 3 campuses and around 15,000 active students
  - Approximately 2,500 diplomas granted every year in 50 different careers
  - Careers such as Business, Biology, Computer, Economics, Industrial Chemistry, and Systems Engineering
- **Universidad Tecnica Nacional (UTN)**. Established in 2009
  - Main campus conveniently located 1.5 km from Coyol in Alajuela
  - 5,000 students enrolled in 2010
  - 30 different technical careers including: Accounting, Business, Electromechanics, Electronics, Information Technology, Production Supervision, Quality Assurance, and Industrial Production

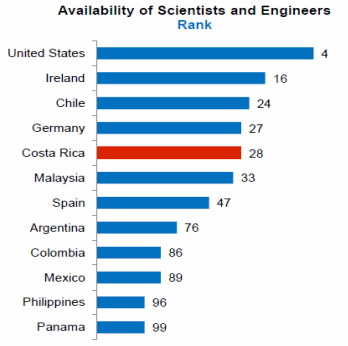
Training centers	89 Technical High Schools that graduate technicians in electronics, precision metal work, computer, microelectronics, and also administrative areas.
National Training Institute (INA)	Offers on-site technical training that leverage on its centers for electronics (with the most modern equipment and laboratories), precision metal-mechanics and plastics, among others.
Training Center for trainers (CEFOF)	Emphasis in quality culture and norms such as ISO, QS, 5S, best practices and lean practices.
Universities	4 public and 52 private. There are two state universities particularly linked with the MDM industry: University of Costa Rica and Technological Institute of Costa Rica, which offer Associate, Bachelor, Licentiate, Master and Doctorate (PhD) degrees.

There is a constant growth of graduates in engineering programs



The number has been growing since 2001 at a rate of 5.5%

Source: CINDE based on data from CONARE and Universities Registry Departments



Source: World Economic Forum.
The Global Competitiveness Report 2010 - 2011

According to CINDE, the following are characteristics of the Costa Rican workforce:

- **Highly productive**
  Most of the MDM companies, not to say all, are experiencing high productivity rates, mainly when compared to their parent facilities. For instance, INAMED, a silicone breast implant manufacturer, has stated that its Costa Rican facility has a productivity rate that is 30% higher than a similar operation located in Santa Barbara, CA.
- **Low Turn Over**
  A survey conducted by CINDE shows that turnover rates in MDM for Costa Rica are less than 1% for managers, 4% for technicians and engineers, as well as only 3% and 9% for qualified (workers and 9% for) and non-qualified workers, which represent a highly stable workforce.
- **Learning Curve**
  Costa Ricans are easy learners and capable of adapting to new processes and high technologies. From a company's view, this translates into important reductions in training and labor costs, as the learning curve of Costa Rican employees tend be 3-4 weeks, 50%.
- **Competitive labor costs**
  Profitable MDM requires not only a high quality location, but also low operating costs.

Average wages are cost competitive (US$)

Job Position	Monthly Average	Monthly Average plus Mandatory Benefits [a/]	Total Annual Cost ('000)
Quality Control/Product Develop. Manager	5,867	7,891	70.4
Production Manager	5,700	7,666	68.4
Plant and Process Engineer	2,172	2,921	26.1
International Purchasing Agent	2,044	2,749	24.5
Quality Engineer	2,001	2,691	24.0
Quality Control Supervisor	1,844	2,480	22.1
Specialized Technician	984	1,324	11.8
Milling Machine / Lathe Operator	797	1,072	9.6
Specialized Plant Operator	631	848	7.6
Basic Machine Operator	543	731	6.5
Non-Specialized Plant Operator	482	649	5.8

Source: Medical Manufacturing Industry. Special Survey 1st semester, 2012.
Data for Life Sciences Companies.

On the other hand, the increase of companies in the medical equipment sector simultaneously with an increase in demand of the labor force could force up the wages of employees suitable for the sector. A recent study showed that from 2006 to 2010 the average salary of an engineer in a manufacturing facility in the Free Trade Zone increased with a maximum of 80%. Also high rotation rates of employees are present: in the services sector the rotation rate is 65%, in the manufacturing sector the rate is 40%. Some companies already indicated that this is currently an issue for them. The increasing competition makes it hard to keep employees as better labor conditions are offered to them, and employees look for possibilities to develop themselves. Especially the competition with companies in the Free Trade Zone is seen as hard, as the salary and secondary conditions these companies can offer to their employees is usually higher.

Although cooperation exists between educational institutions, and the private sector, especially to improve the quality and quantity of work force, in the medical equipment sector there is still a lack of sufficient PhD educated employees. Some necessary master programs are not being offered by Costa Rican universities. In addition, the offer of PhD positions at Costa Rican universities is limited. The UCR does not have an engineering PhD position. Experience with research relevant for private sector is the main criteria why PhDs are important for international companies. Although universities are introducing new programs most students depend on scholarships for foreign universities for master or PhD programs. In 2011 126 students got a scholarship for superior studies abroad. The main destinations were Germany, Spain and the United States. At the same time the amount of employment agencies in Costa Rica is limited, making it hard for companies to find sufficient qualified employees.

Another skill required for the labor force by companies active in the medical equipment sector is having a good command of English. It is necessary for services delivered by the sector, because most companies produce for the US market and have their customer services in Costa Rica. Although, as shown before in this report, the mastering of English is improving in Costa Rica, at the moment there is still a lack of professionals who also speak English at a sufficient level.

Clínica Bíblica and Baxter do not experience shortages in human capital such as noticed by CINDE and the CCSS. Clínica Bíblica hires the best staff for the best salaries. The clinic signals an improving quality of the Tico-human capital. However, due to the continuing attraction of FDI by the Costa Rican government the demand for labor continues to increase. At the same time the amount of employment continues to be the same creating labor shortage. In the public sector there remains a shortage of specialized doctors and nurse, whereas in the private sector, according to Lucia Gross, Investment Promotion Manager of the life sciences sector of CINDE, it is especially quality staff that is missing. There is a lack of quality regulatory, quality engineers (calibration of components) and quality control, for example in the areas of electro mechanics and industrial maintenance. At the moment, these quality positions are filled up by foreigners. This is confirmed by the CCSS and big production companies such as Hospira and Boston Scientific, who signal a clear lack of human capital in Costa Rica in the medical equipment sector. It is not quantity but quality that is lacking. There are not enough graduates which can be hired and trained in the technical/medical sector, according to Hospira. Hospira would prefer local workers because of its cost-effectiveness, however, at this very moment; they are very open for foreign quality workers. Hospira thinks Costa Rica would have a lot to gain by having a larger base of quality professionals.

5 Medical equipment sector SWOT analysis

Strengths	Weaknesses
• Costa Rica is recognized as a strategic business site location • Strong and stable economic growth (FDI) • Relative political stability • Proximity to markets with high purchasing power like US • Geographical proximity market • Communication infrastructure well developed with high level of coverage • Strong outsourcing qualities • Medical equipment needs to be replaced on short terms • Demand will increase worldwide because of rising GDP's and an ageing population • Solid business sophistication	• Large number of big enterprises, US domination • Getting patents and establishing businesses is hard and slow • Lack of government investment for improvement education • Insufficient financing of R&D sector, both from public and private sources • Physical infrastructure needs improvement • Wages are increasing rapidly as a result of high demand for labor
Opportunities	**Threats**
• Exporting products (through local representative) that are being asked for • Introduce innovative products (fairs) • Employment and training agencies to link demand well-educated employees • Send high quality professional workers • Investments of companies with experience in R&D • Outsourcing of back offices or services	• Multinationals have limited connections to local companies • Cultural differences in business relations • Security needs improvement • Not realizing that it requires a long process entering the Costa Rican market

6 Concluding remarks

From this report it can be concluded that Costa Rica is a very attractive destination for investments in the medical equipment sector. The country experiences a significant and continuing economic growth, driven by high Foreign Direct Investment. Between 2012 and 2017, per capita consumption in US dollar terms is forecast to grow by 45%. In Costa Rica the real GDP grew by 5% in 2012. Costa Rica counts with a stable political system, good infrastructure, a high education level, and low local costs for land and labor. Costa Rica is one of Latin America's most stable economies. After the last crisis, almost 25 years ago, it has maintained a yearly growth rate of over 4,5%. Costa Rica is the first country in Latin America in, the first high-tech exporter in Latin America (fourth in the world) and the first country in Central America & the Caribbean for Future FDI. Furthermore, Costa Rica is the best Latin American country for outsourcing. The country has many incentives for foreign investors.

In the medical equipment sector one can distinguish three main growth areas; the first is the public market controlled by the CCSS, where demand for higher quality health care has been rising because of an increased income per capita and where there lie possibilities for Dutch exports because the CCSS is spending a lot of money on new facilities and new equipment. Medical devices need to be replaced on a short term and demand is rising because of the ageing of the population (mainly in Europe). The second growth areas is medical tourism, an industry with an income of US $ 337.7 million in 2012 and an expected sharp raise to over US $ 800 million within three years. The third growth area is Costa Rica as 'springboard', part of the global value chain, where high tech assembly can take place before exporting the products to the final destination. Because of its proximity to end-markets and free trade treaties Costa Rica is well suited for this practice.

During the period 2006-2011 the investment of medical devices companies has represented around 50% of the total FDI generated by Free Trade Zone companies in Costa Rica. There is an interesting local and regional market for the medical equipment sector. All kind of medical equipment is still needed for the Costa Rican public hospitals, such as ultrasound and X-ray devices, gamma cameras, operation tables, cleaning systems, boilers and electricity generators. According to CINDE there is also a market for other products in the areas of molding (plastics), precision mechanics, cardiovascular and laboratorial products. Private medical centers signal that they are in need of suppliers with high quality standards who want to develop their systems and high tech tooling companies. In the area of metals, there are no local suppliers and companies that are specialized in designing industrial equipment are rare. Furthermore, there is definitely market for resin pallets. In addition, private hospitals are keen on innovations. Important sources of information are specialized trade fairs that provide a good entry point for Dutch companies. Lastly, private medical centers and production companies alike signaled it is of great importance having a local agent present in Central America.

There are deficiencies in the field of human capital for the production companies and within the public sector, mainly specialized doctors and nurses as well as graduates in quality engineering. There is a lack of quality regulatory and quality control, for example in the areas of electro mechanics and industrial maintenance. At the moment, companies are very open to receive foreigners for these positions. Another market opportunity is the establishment of employment agencies, a still not fully developed market, which can seize upon the shortage described and actively help companies to find employees with specific requirements. In addition, such employment agencies can contribute to the training of employees.

Entering the Costa Rican market can be complicated. Although the country is welcoming foreign companies and products they will have to surmount bureaucracy and cultural differences. The Global Competiveness Index mentions that the most problematic factors for doing business in Costa Rica are the inefficient government bureaucracy, the inadequate supply of infrastructure, and the access to financing. Notwithstanding these challenges, Costa Rica depicts a fairly strong overall position in the region thanks to its friendly policies toward trade, with low trade tariffs and few constraints on FDI, and its strong educational system—both in terms of pre-university enrollment rates and overall quality. The country presents strong levels of technological adoption with many companies in high-tech industries, as well as solid business sophistication.

ANNEX I – Sector Addresses Overview

In this section the addresses of relevant organizations for the medical equipment sector in Costa Rica are supplied.

ROYAL DUTCH EMBASSY in Costa Rica – Economic Diplomacy (Trade & Commerce)
The Royal Dutch Embassy in Costa Rica is responsible for Dutch interests in Costa Rica, El Salvador, Honduras and soon Guatemala (July 2013) and Nicaragua (December 2013).

Oficentro La Sabana
Edificio 3, 3rd floor,
Behind the Contraloría
La Sabana, San José
Phone: (+506) 2296 1490
sanjose@trade-minbuza.nl
sjo-ea@minbuza.nl
www.holanda.cr
www.facebook.com/embajada.holanda.cr

CINDE
CINDE, the Costa Rican Investment Promotion Agency, is a private non-profit nonpolitical organization founded in 1982. It provides assistance to investors through the New York and Costa Rica offices. It supports foreign investors and entrepreneurs without charge. It is especially focused on manufacturing and medical equipment.
www.cinde.org

CINDE Costa Rica
Plaza Roble Edificio Los Balcones, 4th Floor,
Escazú, San José, Costa Rica
invest@cinde.org
Tel: (+506) 2201-2800
Fax: (+506) 2201-2867

CINDE New York
100 Park Avenue, 16th Floor
New York, NY 10017
cindeny@cinde.org
Ph: +1-877-992-4633

PROCOMER
Costa Rican organization responsible for promotion of commerce outside of the country

Edificio Centro de Comercio Exterior, avenida 3ª / calle 40.
San José, Costa Rica
www.procomer.com
Head of Commercial Promotion
Álvaro Piedra
apiedra@procomer.com
Phone: (+506) 2299-4852 Fax: (+506) 2233-4655

AmCham
The Costa Rican-American Chamber of Commerce (AmCham Costa Rica) was founded over 39 years ago by a group of North American and Costa Rican businesspeople with a vision towards promoting and nurturing the bilateral relationship between the United States and Costa Rica. Today's AmCham organization consists of 400 companies and 1300 corporate representatives divided almost equally between Costa Rican and US interests. The AmCham membership represents all areas of the country´s economic activity including agriculture, livestock, aquaculture, importers/distributors, tourism, manufacturing industries, banks and financial institutions, construction and non-profit organizations. AmCham member companies represent 80% of Costa Rica's foreign direct investment and 75% of the country's exports. AmCham is the leading advocate for increased trade and investment between the United States and Costa Rica and is a vigorous advocate for creating the conditions that will enable Costa Rica to become a major global competitor for foreign direct investment. AmCham offers a variety of activities and services to help its membership be better prepared for doing business locally, regionally and internationally. For US firms looking to do business in Costa Rica AmCham offers its business mission program which consists of organizing and coordinating business meeting agendas with local companies. Also, AmCham has a working committee active on Information Technology.

http://www.amcham.co.cr
Phone: (+506) 2220-2200
300 m nordeste del ICE, Sabana Norte
P.O. Box 4946-1000 San José, Costa Rica
chamber@amcham.co.cr

CICR
Chamber of Commerce and Industry of Costa Rica

350 mts Sur de la Fuente de la Hispanidad, San Pedro
San José, Costa Rica
www.cicr.com
Phone: (+506) 2202-5600
Fax: (+506) 2234-6163

CIÍNICA BÍBLICA
Clínica Bíblica is a private healthcare clinic.

Calle Central y primera, avenida 14 y 16
San José, Costa Rica
Phone Central: (+506) 2522-1000
Fax: (+506) 2258-7184
consejomedico@clinicabiblica.com

Head of Supplies
Lic. Abel de la O Benavides
adelao@clinicabiblica.com

HOSPIRA Costa Rica Ltd.
Production facility of Hospira in Costa Rica

La Aurora, Zona Franca Global Park, Heredia,
Heredia, Costa Rica

General Manager of Costa Rican Operations
Isaías González
Isaias.Gonzalez-Garcia@hospira.com
Executive Assistant General Manager
Victoria Avila
victoriae.avilaharper@hospira.com
Tel. (+506) 2209-5033
Fax (+506) 2209-5308

BAXTER Productos Médicos Costa Rica Ltda.
Production facility of Baxter in Costa Rica

600m O. de la entrada Principal Parque Industrial de Cartago.
Cartago, Costa Rica
Phone: (+506) 2573-7811
Fax: (+506) 2573-7047
One_baxter@baxter.com

BOSTON SCIENTIFIC Costa Rica
Production facility of Boston Scientific in Costa Rica.

Alajuela, El Coyol, Zona Franca Propark, 2546 Calle Primera.
Heredia, Costa Rica.
Phone: (+506) 2436-8000
Fax: (+506) 2436-8100

Director Operations, Engineering
Federico Rivera
federico.rivera@bsci.com
Phone: (+506) 2436-8010
Mobile: (+506) 8851-5490

SIRE: Servicios Integrales de Representación Europea
Imports medical equipment to Costa Rica and assists European companies with their export to Costa Rica.

Apartado Postal 55-1225
CP 10109 – Pavas,
San José, Costa Rica
www.sire-web.com
Phone: (+506) 2290-2974

General Director
Michiel van Rossum
michiel@sire-web.com

Ministry of Science and Technology (MICIT)
The mission of MICIT is to promote, encourage and stimulate the creation of appropriate conditions for research, innovation, knowledge and technological development of the country, and to support economic growth in Costa Rica.

50 metros Este del Museo Nacional, calles 19 y 17, Avenida Segunda
San José, Costa Rica
Phone: (+506) 22481515
Fax : (+506) 2257.8895
micit@micit.go.cr
www.micit.go.cr

Ministry of Economy, Industry and Commerce (MEIC)
The mission of MEIC is to promote and support Costa Rica both economically as socially with public policies that steer the market and protect its consumers.

Sabana Sur, 400 m al Oeste de la Contraloría General de la República
Apartado Postal 10.216-1000
San José, Costa Rica
Phone: (+506) 2291-2115

Director of Foreign Cooperation
Jorge Rodríguez Vives
Phone: (+506) 2291-2115 ext: 222
Fax: (+506) 2291-1053
jrodriguez@meic.go.cr
www.meic.go.cr

Ministry of Trade (COMEX)
The mission of COMEX is to promote, facilitate and consolidate the insertion of Costa Rica in the international economy. In that way, COMEX support the economic growth within the country and, at the same time, the conditions of life for all Costa Ricans.

Avenida 1 y 3, calle 40. De la Sucursal del BCR en Paseo Colón 75 metros norte.
Edificio Centro Comercio Exterior (PROCOMER).
San José, Costa Rica.
Apartado Postal 297-1007 Centro Colón, Costa Rica
Phone: (+506) 2299-4700
Fax: (+506) 2255-3281
www.comex.go.cr

MINISTRY OF HEALTH
The mission of the Ministry of Health is to guarantee the protection and the improvement of the health of the civilians of the state by taking institutional leadership and participate socially intelligent in the market under the principles of transparency, equality, solidarity and universality.

Calle 16, Avenidas 6 y 8 - San José, Costa Rica
Apartado Postal: 10123-1000, San José
Phone: (+506) 2223-0333
www.ministeriodesalud.go.cr

Institutio Tecnológica de Costa Rica
Institutio Tecnológico de Costa Rica was created in 1971 and was the second public university of Costa Rica. It is established in Cartago and has an average of 8000 students a year. The university is specialized in science and technology and offers different areas of studies related to this field, among which technology and engineer science, technology and earth sciences, economic and administrative sciences, and education. Bachelor students need to do a six month during internship instead of a thesis to be able to graduate. To promote the linkages with companies, the university established an Academic and Corporate Relation. Currently the Center is involved in a Strategic Economical Zone in Cartago stimulating a new industrial park in Cartago near Terramall. See www.terracampus.cr for more information or contact the Academic and Corporate Relation Center.

www.tec.ac.cr

Academic and Corporate Relation Center

Sede Central de Cartago
vinculacion@itcr.ac.cr
Phone: (+ 506) 2550-2262 or (+ 506) 2550-2330
Fax: (+506) 25516343

Inter-American Development Bank (IADB)
The Inter-American Development Bank offers credit with the goal of developing the private sector, especially the smaller and medium size companies.

Fernando Quevedo
Edificio Centro Colón, Piso 12
Paseo Colón, entre calles 38 y 40
San José, Costa Rica
Phone: (+506) 2523-3300
Fax: (506) 2233-1840
bidcostarica@iadb.org

CABEI
This bank from Central America for Economic Integration (CABEI) finances government and particular projects with the goal of support economic development and integration. These projects are focused on creating more work, a better productivity and competing position, at the same time improving the human development indexes of countries in Central America.

Hazel María Cepeda
De la Fuente de la Hispanidad 25 metros Este
Apdo. Postal 10276-1000
San José, Costa Rica
Phone: (+506) 207-6500
Fax: (506) 253-2161

FME-CW
The FME-CW(M) is responsible for an important part of the technological industry of the Netherlands.

Postbus 190, 2700 AD Zoetermeer
Boerhaavelaan 40, 2713 HX Zoetermeer
Phone: (+31)79 353 11 00
Fax: (+31)79 353 13 65
info@fme.nl
www.fme.nl

TASK FORCE HEALTH CARE (TFHC)
Dutch platform for the life sciences & health sector in the Netherlands

Boerhaavelaan 40
P.O. Box 190
2700 AD Zoetermeer
Phone: (+31)79 3531 283
Fax:(+31)79 3531 365
info@tfhc.nl
www.tfhc.nl

Branch Medische Technologie Nederland
This Dutch branch organization for medical technology unites approximately 120 producers and suppliers with a total turnover of more or less 1,6 billion euros. The market for the branch mainly exists out of hospitals, institutions and health care insurance companies. All kind of products are involved: from specific disposables to high-tech medical investment products.

Postbus 366, 3830 AK Leusden
Dodeweg 6, gebouw B, 3832 RC Leusden
Phone: (+31)33 465 10 63
Fax: (+31)33 461 66 38
info@fhi.nl
medischetechnologie.fhi.nl

HOLLAND HEALTH TECH

Holland HealthTech is the branch organization for medical technology in the Netherlands. Its members are companies that develop, produce or trade medical equipment and related devices and software.

Postbus 190, 2700 AD Zoetermeer
Boerhaavelaan 40, 2713 HX Zoetermeer
Phone: (+31)79 35 31 404
Fax: (+31)79 35 31 365
hollandhealthtech@fme.nl
www.hollandhealthtech.nl

FMO

De Netherlands Development Finance Company (FMO) has some available funds for Dutch companies that want to enter into business abroad. It supports the private sector in developing countries and upcoming markets in for example Latin America with loans, guarantees and other activities that enhance investments.

Phone.: (+31)70 314 96 96
Fax: (+31)70 324 61 87
www.fmo.nl
info@fmo.nl

EVD

The Economische Voorlichting Dienst (EVD, agency of the Ministry of Economic Affairs), supports businesses and public organization with cooperation and entrepreneurship. The EVD stimulates international activities with information about foreign markets with financial and project information. Furthermore, the organization helps networking with business partners abroad. In addition, the EVD uses its worldwide network of national and international organizations such as the Chambers of Commerce, Dutch embassies, Consulate-Generals, the European Commission and international organizations of finance. Lastly, the EVD owns a useful website on market comparisons.

Juliana van Stolberglaan 148
2595 CL Den Haag
Postal Address: Postbus 20105
2500 EC Den Haag
Phone: (+31)70 7788695
Fax: (+31)70-3858097
costa-rica@info.evd.nl
http://www.evd.nl

Holland Promotie

Holland Promotie is responsible for the promotion of Dutch commerce outside of the Netherlands. This promotion is not only done by means of a website and a magazine ('Made in Holland') but also by being present on the most important fairs and other events to inform companies, journalists and governments outside the country.

www.hollandpromotion.nl

Other relevant medical equipment companies in Costa Rica:

- **Medical Device Companies**
  Abbott Vascular, Allergan, Arthrocare, De Royal, Establishment Biotech, Hologic, Horizons Intl., Koros USA, Moog Medical, St. Jude Medical, Volcano
- **Medical Device Contract Manufacturers**
  Atek Medical, MedTech, NDC, Oberg Industries, Precision Concepts, TEGRA Medical
- **Suppliers**
  Advanced Thermoforming, Bentec, International Precision Molds, MedConx, Merrill's Packaging, PPC Ind., Precision Wire Components, Specialty Coating Systems, Veridiam Medical
- **Sterilization**
  BeamOne, Sterigenics
- **Others**
  Amoena, Proquinal, Smith Sterling

ANNEX II – Medical Equipment Sector Fairs in 2013

- **Life Sciences Forum**
  Costa Rica, 18-20 March
  This is one of the most important and specialized events in Latin America for the life sciences industry. The Life Sciences Forum Costa Rica 2013 will bring together more than 300 representatives from the medical devices industry, as well as suppliers and providers of key services, consulting firms and other industry stakeholders. www.lifesciencescr.com

- **FIME Miami Beach**
  United States, 7-9 August
  FIME is the largest International Medical Trade Fair and Congress in the United States. The annual event is a purchasing show drawing conventional distributor networks, group purchasing organizations, integrated delivery networks, hospitals, imaging centers, private practice facilities, and HME / DME providers. Attendees visit FIME to see the latest medical equipment, products, supplies, technology and services and learn from industry experts in the three day, six track educational conference. The dynamic attendee base is key to penetrating and navigating around complicated medical distribution channels and networks. www.fimeshow.com

- **MD&M Florida Medical Design and Manufacturing Fair**
  United States, 6-7 March
  www.canontradeshows.com/expo/south13

- **BIOMEDevice Industry Event for Medical Device and Biopharmaceutical Manufacturing**
  United States, 10-13 April
  www.canontradeshows.com/expo/bioboston13

- **International Fair of Medical Technology, Rehabilitation and Healthcare**
  Czech Republic, 14-17 May
  www.bvv.cz/en/medical-fair-brno/medical-fair-brno-2013

- **MEDTEC: Medical Equipment Design and Technology Exhibition and Conference**
  France, 15-16 May
  www.medtecfrance.com/en

- **LAUSANNETEC Trade Fair for Micro-technology, High Precision, Medical Technologies and Electrical Engineering**
  Switzerland, 28-31 May
  www.mch-group.com/fr-CH/MCHGroup/Companies/MCHBeaulieuLausanne.aspx

- **ESC Congress: European Society of Cardiology Annual Congress and Trade Fair**
  The Netherlands, 31 August – 4 September
  www.escardio.org/congresses/esc-2013/Pages/welcome.aspx

- **MEDTEC: Medical Equipment Design and Technology Exhibition and Conference**
  Italy, 2-3 October
  http://medtec-italy.com/index.php?page=home-en

- **COMPAMED: International Trade Fair High Tech Solutions for Medical Technology**
  Germany, 20-22 November
  www.compamed-tradefair.com

ANNEX III – Brief overview of the medical equipment sector in the Netherlands and what it has to offer

Just like the whole European market for medical equipment the Dutch market is characterized by the presence of many middle-sized companies and a couple of big multinationals. The biggest organization of branches, FHI-Medical Technology, counts 120 members. Most companies active on the Dutch market are subsidiaries of bigger companies. Often, the origin of those companies is German, Japanese and American (from the United States). Production and investment efforts are often orientated internationally, but the demand is nationally orientated.

The best approximation of the medical equipment market in the Netherlands is around €2,2 billion. This includes the acquirement of medical devices by hospitals and clinics in the whole country. Still, it is hard to say to what extent the market is growing, it is hard to compare the different sources. Surely the expenditures of the medical sector skyrocketed over the last years in the Netherlands. Over the period 2005-2010 Espicom approximated that the market grew about 4 to 5 per cent (€ 1,4 billion to € 1,8 billion). It is expected that this grow retains around 4 per cent per year.

A great challenge for the Dutch medical equipment market is the poor demand. Official policies have been issued to strengthen the demand, for example improving the cooperation between hospitals and the market transparency. Alternative would be exporting to other countries in the world, for example Costa Rica. When foreign hospitals and other potential buyers of Dutch medical equipment are considered, they need a clear overview of what the Netherlands have to offer.

In the Netherlands there is the Task Force Health Care (TFHC). The Task Force Health Care (TFHC) is a not-for-profit platform which was founded in 1996. It stimulates cooperation among organizations within the Dutch life sciences & health sector and promotes sustainability in healthcare. The partners of TFHC consist of a vast network of companies, knowledge-institutes, NGOs and the government active in the Dutch life sciences & health sector. The TFHC and its partners provide innovative and sustainable solutions to global (and local) healthcare challenges. TFHC regularly visits and welcomes decision makers, influencers and investors from the public- and private healthcare sector to provide support in developing and / or improving sustainable healthcare infrastructures. The organization offers the list on the next page to inform foreign companies about what the Netherlands have to offer in the sector of medical equipment.

CATEGORY	SUBCATEGORY	COMPANY
Diagnostic / Imaging	Computerized Tomography (CT)	• NDS Surgical Imaging • Philips Healthcare • Toshiba Medical Systems Europe B.V.
	Magnetic Resonance Imaging (MRI)	• Easote Europe • NDS Surgical Imaging • Philips Healthcare • Toshiba Medical Systems Europe B.V.
	X-Ray	• Delft Diagnostic Imaging • Philips Healthcare
	Nuclear Medicine	• Nucletron
ICT / E-Health	Communication Solutions, Organization and Planning Solutions, Hospital Digitalization, Telemedicine, Archiving and Documentation Services	• IICD
	Software for Labs / Hospitals / Surgeries / Rehab	• Philips Healthcare
	Online / Mobile Solutions	• Delft Diagnostic Imaging • IICD • Philips Healthcare
Physiotherapy	Rehabilitation Equipment	• EWAS Medical
	Physiotherapeutic Devices	• EWAS Medical • Enraf-Nonius B.V.
Hospital / Furnishing	Hospital Infrastructure	• Bayards Aluminium Constructies B.V. • Telecom Bedrijfscommunicatie B.V. • Vahlkamp International B.V.
	Sanitary Installations	• Alfa-HygiCare B.V.
	Doors	• Xidoor B.V.
	Mobile Hospital / Clinics	• Lamboo Mobile Medical
	Lightning	• Philips Healthcare
Disposables & Consumables	Catheters, Clothing, Shoes and Accessories, Disposable articles for laboratories, Disposable articles for hospitals, Medical Commodities, Hospital Textiles	• Medical Export Group
	Bandage Materials, Disinfectants, Disposable articles for surgeries	• CuraMedical B.V. • Medical Export Group
Items by Discipline	Radiology	• Philips Healthcare • TeleConsult Europe B.V. • Toshiba Medical Systems Europe B.V.
	Anesthesiology	• Dräger medical
	Neurology	• Technomed Europe
	Oncology	• Nucletron
	Cardiology	• Atrium Europe B.V.

	Emergency Care	• Bayards Aluminium Constructies B.V.
Therapy / Physical Medicine	Hydrotherapy	• EWAC Medical
	Ultrasonic Therapy	• Esaote Europe
	Brachytherapy	• Nucletron
	Dental Equipment and Supplies	• Dental International B.V.
Surgery	Vascular Surgery Instruments	• Atrium Europe B.V.
	Endoscopes and Accessories	• DOVIDEQ medical B.V.
	Sterilization Equipment	• Tuttnauer Europe B.V.
Laboratory / Research	Incubators	• Dräger Medical • Medical Export Group
	Analyzer Appliances, Centrifuges, Filtration Systems, Pathology Equipment, Microscopes, Water Purification Systems, Drying Equipment, Agigators, Sterilization Equipment	• Medical Export Group
Emergency / Rescue	Blood Donor Vehicles, Mobile Hospitals / Clinics	• Lamboo Mobile Special
	Ambulance / Rescue Vehicles	• Lamboo Mobile Special • ICET
	Disaster Management	• ICET • Medical Export Group
HighTech / Manufacturing	Precision Technology, HighTech / Manufacturing Items	• MACAWI B.V.

Source: TFHC.nl

In addition, Marlon López Jiménez of Philips Medical (Elvatron) Central-America said in an interview that they could supply the following products:

- (A) Imaging Systems
  - Rayos-X ($200.000)
  - Manografos ($250.000)
  - Arcos en C ($100.000)
  - Rayos-X-moviles ($50.000-$200.000)
  - Fluoroscopía ($200.000)
  - TAC ($300.000-$1.000.000)
  - MRI ($1.000.000)
  - Ultrasonidos ($30.000-$150.000)
  - Molecular Imaging –
    - PET ($600.000)* [needs Ciclotrones, which are not yet available in Costa Rica, although there is a related project currently with UCR]
    - Spect ($300.000)

- (B) Monitoring Systems
  - Monitores Signos Vitales ($10.000) (#1 of the world)
  - Desfibriladores ($8.000)
  - Electrocardiografos ($5.000)

ANNEX IV – List of most traded products in the sector

Export from Costa Rica to the European Union:

- **901890** Other Medical, Surgical or Veterinary Instruments and Appliances, and parts and accessories thereof:
- ***901839*** Las demás jeringas, agujas, catéteres, cánulas e instrumentos similares
- **902150** Pacemakers for stimulating heart muscles, excluding parts and accessories thereof
- **902190** Other Appliances Which Are Worn in the Body, to Compensate for a Defect

Import vanuit de EU

- **901890** Other Medical, Surgical or Veterinary Instruments and Appliances, and parts and accessories thereof:
- ***901839*** Las demás jeringas, agujas, catéteres, cánulas e instrumentos similares
- **902150** Pacemakers for stimulating heart muscles, excluding parts and accessories thereof
- **902290** Other, including parts and accessories:Other Apparatus Based On the Use of X-rays or of A, B or R Radiations

The medical equipment sector is part of the General System of Preference (GSP) which causes that, except for the five products listed below, the sector does not know tariffs.

- **9020.00.90** (1,7%): Other breathing appliances and gas masks, excluding protective masks having neither mechanical parts nor replaceable filters; parts and accessories thereof:
- **9022.29.00** (2,1%): Other, including parts and accessories:Other Apparatus Based On the Use of X-rays or of A, B or R Radiations
- **9022.3000** (2,1%): X-ray tubes
- **9022.9010** (2,1%): Other, including parts and accessories:Other Apparatus Based On the Use of X-rays or of A, B or R Radiations
- **9022.9090** (2,1%): Other, including parts and accessories:Other Apparatus Based On the Use of X-rays or of A, B or R Radiations

Following are the best prospects sub-sectors for U.S. medical equipment and supplies: Electro-diagnostic apparatus (including apparatus for functional exploratory examination or for checking physiological parameters); parts and accessories.

9018-1200 – Ultrasonic scanning apparatus
9018-1300 – Magnetic resonance imaging apparatus
9018-1940 – Apparatus for functional exploratory examination, parts and accessories
9018-1955 – Patient monitoring systems (pregnancy and breast detectors)
9018-3900 – Bougies, catheters, drains, sondes and others
9018-3990 – Serum, solutions and blood infusion and transfusion apparatus
9018-4100 – Dental drill engines, dental burs, dental hand instruments and parts
9018-5000 – Ophthalmic instruments and appliances, parts and accessories
9018-9064 – Electro-medical instruments and appliances: defibrillators
9018-9075 – Dialysis instruments and apparatus

ANNEX V – Interview Questions

CLINIC IN PRIVATE SECTOR

- Where do most of the medical equipment you are using coming from?
- Do you buy directly or through agents/distributors?
- How are you informed on new products: specialized reviews, through agent/distributors, through fairs? Which fairs do you visit?
- What is your experience with Costa Rican suppliers if medical devices? Are they High End producers or are they more into basic equipment?
- What type of products or companies is still wished for in CR in the medical devices sector?
- Which investment opportunities can be expected that are attractive for companies in the medical devices sector?
- Does your company indicate a lack of sufficient human capital? How could this probably be solved? Which qualities are most wanted? What jobs need to be filled?
- Which side-production would serve your company? (e.g. sterilization, packaging)
- What events/conferences do you visit to be up-to-date about new innovations and possibilities? Which concrete examples are in your agenda for the upcoming months?

MEDICAL EQUIPMENT PRODUCERS / TRADERS

- For what type of market do you produce? End market, value chain?
- Where do your machines come from?
- Where do the parts come from that you use for your product?
- What are you missing? What would you like to be offered locally?
- Do you do any R&D? Do you need any R&D capacity?
- Does your company indicate a lack of sufficient human capital? How could this probably be solved? Which qualities are most wanted? What jobs need to be filled?
- Which side-production would serve your company? (e.g. sterilization, packaging)
- What events/conferences do you visit to be up-to-date about new innovations and possibilities? Which concrete examples are in your agenda for the upcoming months?