

## **Decisions of the atpdea and its impact on the floriculture. Comparative case Colombia-Ecuador. 2011-2015**

### **Decisiones de la atpdea y su impacto en la floricultura. Caso comparativo Colombia-Ecuador. 2011-2015**

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**Abstract:** The floriculture in Ecuador generates important sources of work and national development, so it was proposed as a general objective, to compare the flower exports of Ecuador versus Colombia in the period 2011 - 2015, considering the influence of the decision of the Ecuadorian government to eliminate the tariff preference of the ATPDEA in 2013, applying the deductive, quantitative, descriptive, documentary and field methodology, after applied the direct observation of the records of the state institutions (Central Bank of Ecuador and PROECUADOR), Observing the following results: Ecuadorian flower exports in 2011-2015 showed an irregular trend, increasing in 2012 and 2013, decreasing in 2014, increasing in 2015, showing a drop in 2014, a period after the ATPDEA rupture on the part of the Central government, recovering in 2015, while Colombian flower exports grew in 2012, 2013 and 2014 but declined in 2015, showing an increase in 2014 (the period after the ATPDEA rupture by the Ecuadorian government) and a drop in 2015, where Ecuadorian exports were recovered, in spite of it, a negative behavior in 2014 when compared to Colombia, corroborating the hypothesis, nevertheless, the country's evident recovery in flower exports, which was better than the decline in Colombia, said that the national government measure, only caused slight affectation to the floriculturist sector.

**Key words:** ATPDEA; exports; floriculture; compared

**Resumen:** La floricultura en Ecuador genera importantes fuentes de trabajo y desarrollo nacional, por lo que se propuso como objetivo general, comparar las exportaciones de flores de Ecuador versus Colombia en el período 2011 - 2015, considerando la influencia de la decisión del gobierno ecuatoriano de eliminar la preferencia arancelaria del ATPDEA en 2013, aplicando la metodología deductiva, cuantitativa, descriptiva, documental y de campo, luego de aplicada la observación directa de los registros de las instituciones estatales (Banco Central del Ecuador y PROECUADOR), observando los siguientes resultados: flor ecuatoriana las exportaciones en 2011-2015 mostraron una tendencia irregular, aumentando en 2012 y 2013, disminuyendo en

2014, aumentando en 2015, mostrando una caída en 2014, un período posterior a la ruptura de ATPDEA por parte del gobierno central, recuperándose en 2015, mientras que Colombia las exportaciones de flores crecieron en 2012, 2013 y 2014, pero disminuyeron en 2015, mostrando un aumento en 2014 (el período posterior a la ruptura de ATPDEA por parte de Ecuador). Gobierno (ian) y una caída en 2015, donde se recuperaron las exportaciones ecuatorianas, a pesar de ello, un comportamiento negativo en 2014 en comparación con Colombia, corroborando la hipótesis, sin embargo, la evidente recuperación del país en las exportaciones de flores, que fue mejor que la disminución en Colombia, dijo que la medida del gobierno nacional, solo causó una leve afectación al sector floricultor.

**Palabras Claves:** ATPDEA; exportaciones; floricultura; comparado

### Introduction

Ecuadorian flower exports grew 20% over the period 2010 to 2013, whose upward trend had been maintained since 2001 to 2010, according to statistics from the (Central Bank of Ecuador, 2014), for this reason it is necessary to know the development of the flower exports after the year 2013, knowing that in this year, the Government of the Econ. Rafael Correa decided to unilaterally eliminate the ATPDEA tariff preferences.

The ATPDEA consisted on a trade agreement signed between Ecuador and the United States, which benefited to our country with the exception of the payment of tariffs in some products that were exported to the North American nation, among them the flowers, in return the Ecuadorian State had to contribute with the giant of North America in the struggle against drugs. (<http://www.eluniverso.com/noticias>, 2013).

The decision to eliminate the tariff preferences of the ATPDEA, on the part of the Ecuadorian government in the middle of the year 2013, was caused because there was not an agreement with the United States to maintain the Base of Manta where Ecuadorian soldiers were operating as a whole with North American advisers in the struggle against drugs (Ekos, 2012).

This decision affected diverse Ecuadorian productive sectors that enjoyed tariff preferences in the exports realized to the United States, one of them was the branch of the floriculture, whose national goods entered the United States with zero tariff, but with the decision of the elimination of the ATPDEA, they increased their prices, for that reason it is necessary to establish the tendency of the competitiveness of the Ecuadorian flowers in the international trade, comparing it with the main Latin-American producer, Colombia.

In Spite of the Ecuadorian government implemented a strategy to support to the floriculturist sector by means of the return of the tariffs that the floriculturists will pay for concept of the elimination of the APTDEA, nevertheless, it is necessary to know the success of this measure, comparing it with the behavior of the nearby country Colombia, our strongest competitor.

The problem consists of knowing the behavior that had the decision of the unilateral rupture of the ATPDEA on the part of the Ecuadorian government in 2013, to identify the competitiveness of the flower sector compared to the flower producers of Colombia and to

delineate the basic line to take corrective and preventive actions that promote the strengthening of the Ecuadorian floriculturist sector.

For this reason, it is necessary to be provided with an analysis that allows to determine: How did the Ecuadorian flower exports evolve compared to that of Colombia in the period 2011 – 2015, in relation to the decision of the Ecuadorian government of the Econ. Rafael Correa of eliminating unilaterally the ATPDEA tariff preferences?

The answer to this question is carried out through the following general objective: To compare the flower exports of Ecuador versus Colombia in the period 2011 – 2015, considering the influence of the decision of the Ecuadoran government of eliminating the tariff preference of the ATPDEA in the year 2013, for that, the following specific objectives must be answered:

- To determine the evolution of the flower exports in Ecuador.
- To determine the evolution of the flower exports in Colombia.
- To establish the behavior of the flower exports of Ecuador with the elimination of the ATPDEA and compare it to the international trade of flowers from Colombia.

The fulfilment of the objectives will allow the determination of a baseline in order to the State makes decisions in the future and in this way to achieve a positive impact on the economic policy of the flower sector of Ecuador, that benefits producers of flowers and promotes generation of employment, strengthening the competitiveness of the international trade of this Ecuadorian agricultural product.

### **Materials and methods**

To fulfil with the raised objectives, the records were taken of (Banco del Central of Ecuador, 2016) and of (PROECUADOR, 2016), where information of the Ecuadorian and Colombian flower exports was found during the period 2011-2015.

In the study a quantitative model was applied, with the method of the square minimums based on the direct observation of the records of the institutions above mentioned, to establish the statistical comparison between the exports of flowers of Ecuador versus those of Colombia in the period 2011-2015, considering that in the year 2013 the elimination of the ATPDEA took place on the part of the Ecuadoran government.

The model used to fulfil with the main objective, must compare the tendency of the flower exports of the mentioned countries in the determined period of time, to identify if they were similar (directly proportional), or they changed in the opposite direction (inversely proportional), so that it is possible to accept or to reject the hypothesis that the method raises.

This means that there will be needed the interrelation of the variables inherent in the exports of flowers in Ecuador and Colombia which will be compared under the consideration of the rupture of the APTDEA in unilateral way by the Ecuadorian government, in a retrospective or historical period.

The Law of Andean Trade Preferences and the Drug Eradication (APTDEA) was designed by the intention of some South American countries contribute the struggle against the

drug trafficking with the Country of the United States, something negative that expands on these borders which are the places that are part of the drug transit up to arrive to the specified country (<http://www.eluniverso.com/noticias>, 2013).

(Solano, 2012), in its article titled, The effects of the Law of Andean Trade Preferences and Eradication of the drug (ATPDEA) in the Foreign trade in Ecuador, points out that “the objective of the APTDEA was focused in the economic advance, the diversification of the exports, consolidation of the democracy and the defeat of the scourge of the drug traffic, for that, some sustainable economic alternatives to the production of drug harvests were provided in the countries of Bolivia, Colombia, Ecuador and Peru”.

The APTDEA was promulgated on October 31, 2002 as a substitution for the ATPDEA created by the United States, in order to the countries associated with this group benefit tariff preferences and have a strengthening of the same, like alternative proposal to the production and traffic of drug (Ekos, 2012).

For the above exposed it is possible to indicate that the purpose of the Law of Tariff Preferences was to transfer to the Andean countries an incentive for helping in the struggle against drugs, favoring them for being exempt in the taxes payment in the exports of the USA, nevertheless the pressure that the country was held was considered to be a blackmail on the part of that Government, bearing with the ending of the agreement, therefore from that moment the exports must cancel the tariffs for the commercialization that are carried out (Comercio, 2014).

From middle of 2013 the flowers, broccoli, tuna and other products originated from Ecuador were already not provided with the tariff preference, what must have had any positive or negative repercussion for the country (<http://www.eluniverso.com/noticias>, 2013).

The Law of Tariff Preferences of the Andean countries was created on December 4, 1991 in the government of George W. Bush, this law consisted of the elimination of tariffs to a series of products for some countries of South America like Peru, Bolivia, Colombia and Ecuador, later on December 31, 2002 the Law of Andean Trade Preference and eradication of Drugs (ATPDEA) was created (Telegraph, 2013).

On this matter, the mathematical model as Gaus that determines the method of square minimums has a long history that goes back in the XIXth century, and consists of determining the existing of the linear dependence between two variables (Bernal, 2012).

The method of the square minimums has the aptitude to determine which are the values of each function that can minimize the sum of the square of its differences and represent it in a percentage that will indicate the dependence of the same ones (Levine, 2012).

Through the application of the proposed mathematical model, it is possible to obtain a confidence level R, which if approaches 100 % will denote dependence, on the contrary if it approaches more 0 % the confidence will be very low; In this way the coefficient obtained as result will show the soundness of linear relation or its interrelation through the coefficient R (Render, 2012).

The exercise presents the relation between the exports of flowers of the Ecuador and Colombia in the period 2011-2015, being represented the Ecuadorian with the blue color and the Colombian with the red one, while the lines demonstrate the tendency between both variables, to sustain the hypotheses, which are detailed next:

- **Null hypothesis:** The elimination of the ATPDEA, by the Ecuadorian government caused a negative impact in the Ecuadorian flower exports compared to the Colombian flower exports.
- **Alternative hypothesis:** The Elimination of the ATPDEA, the Ecuadorian Government caused a positive impact in the Ecuadorian exports of flowers compared to Colombian flower exports.

Under the fulfillment of one of two raised hypotheses, it will be possible to approve one of them any time the following conditions are fulfilled.

- Null hypothesis (Ho):  $R^2 \leq 70\%$  (rejection of the hypothesis).
- Alternative hypothesis (H1):  $R^2 > 70\%$  (approval of the hypothesis).

The result obtained after the application of the method of the square minimums, it will be compared with these conditions, in order to approve one of two hypotheses.

## Results

It was obtained as a result in first place, that flower exports in Ecuador in the period 2011-2015 increasing in the years 2012 and 2013 (13 % and 5 % respectively), while in 2014 it was observed a reduction of 1, 26 % in the flower international trade that increased again in 2, 75 % in 2015, period where the sales of this agricultural good recovered of the drop suffered in 2014.

These results showed that the decision of the Ecuadorian government to eliminate unilaterally the APTDEA in 2013, influenced a decrease of the exports of flowers in the year: 2014, in spite of the year: 2015 there was a recovery of this productive sector, nevertheless it is not possible to allow mentioning the negative repercussion that had the governmental measure in the exports of the agricultural product in analysis in the following year that they were taken.

In relation to the exports of flowers of Colombia in the period 2011-2015, it was obtained as a result a growth in the year 2012, 2013 and 2014 (1, 52 %, 3, 31 % and 4, 74 % respectively), demonstrating acceptable competitiveness of this country on the market, especially in 2014 where the biggest growth was observed, but it decreased in 5, 75 % in 2015, period in which this agricultural good suffered its only drop in the analyzed period.

The application of the mathematical model showed a level of confidence of 63 %, which is less to 70 % raised in the condition, therefore, the alternative hypothesis is rejected and there is approved the null hypothesis, that is to say, that the elimination of the ATPDEA, by the

Ecuadorian government caused a negative impact in the Flower Ecuadorian exports compared to the Flower Colombian, which was observed in 2014, subsequent year to the decision of the central government to eliminate unilaterally the ATPDEA.

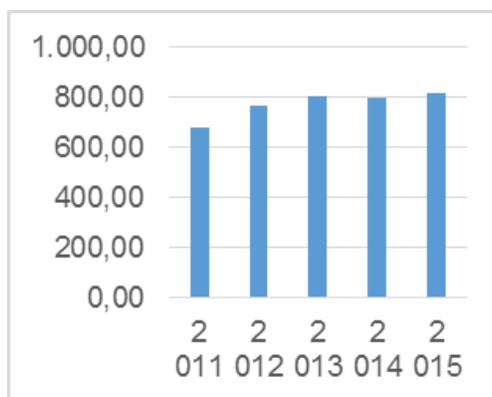
Once the results inherent to the flower exports have been found both Ecuador and Colombia it was possible to observe that in the year 2014, Colombia experienced a growth of its sales of flowers on the international market (4, 74 %), meanwhile Ecuador drooped 1, 26 %, what meant that the elimination of the ATPDEA in our country did not favor to the exports of this agricultural good.

Although also it is outstanding that in the following period 2015, the opposite phenomenon happened that is to say that the exports of Ecuadorian flowers increased while the Colombians drooped, this means that in 2015 it was possible to control in better way the negative effect that caused the elimination of the ATPDEA in the year 2014.

Table 1. Exports of Flowers of Ecuador in million dollars. Period 2011 – 2015

Year	Ecuadorian Exports	Variation
2 011	677,68	
2 012	768,31	13,37%
2 013	808,22	5,19%
2 014	798,06	-1,26%
2 015	820,00	2,75%

Source: (Banco Central del Ecuador, 2016)



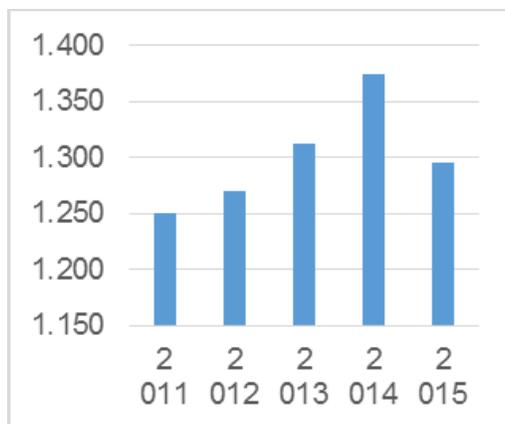
Graph 1. Exports of Flowers of Ecuador in million dollars. Period 2011 – 2015.

Source: (Banco Central of Ecuador, 2016).

Table. 2. Exports of Flowers of Colombia in million dollars. Period 2011 – 2015

Year	Colombian Exports	Variation
2 011	1.251	
2 012	1.270	1,52%
2 013	1.312	3,31%
2 014	1.374	4,73%
2 015	1.295	-5,75%

Source: (PROECUADOR, 2016)

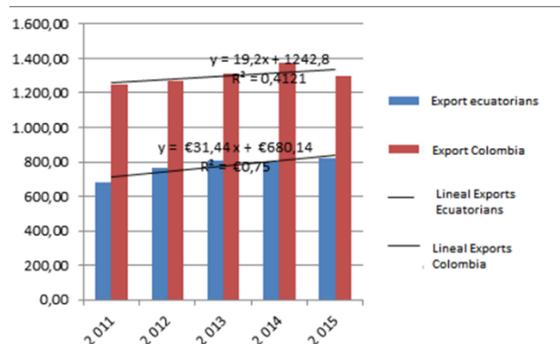


Graph 2. Exports of Flowers of Colombia in million dollars. Period 2011 – 2015.  
Source: (PROECUADOR, 2016).

Table 3. Summary of exports of flowers of Ecuador and Colombia, Period 2011-2015

Years	Ecuadorian Exports	Variation	Colombian Exports	Variation
2011	677,68		1.251	
2012	768,31	13,37%	1.270	1,52%
2013	808,22	5,19%	1.312	3,31%
2014	798,06	-1,26%	1.374	4,73%
2015	820,00	2,75%	1.295	-5,75%

Source: (Banco del Central of Ecuador, 2016) and (PROECUADOR, 2016)



Graph 3. Summary of exports of flowers of Ecuador and Colombia, Period 2011-2015.  
Source: (Banco del Central of Ecuador, 2016) and (PROECUADOR, 2016).

Table 4. Application of the method of minimum squared. Information in million dollars

Years	Ecuadorian Exports	Colombian Exports	YM	XM	XM)²	(Y-YM)²	(X-XM)(Y-YM)	YPRIMA	(Y-YPRIMA)²	(YPRIMA-YMEDIA)²
2011	677,68	1.251,00	1,30	774,45	9,365	2,440,36	4,780,64	1,250,8	0,85	2,532,11
2012	768,31	1.270,00	1,30	774,45	37,75	924,16	186,78	1,297,21	740,13	10,21

2	808,2	1.312,	1.30	774,4	1.140	134,56	391,6	1.3	35,49	308,26
01	2	00	0,40	5	,14		9	17,9		
3								6		
2	798,0	1.374,	1.30	774,4	557,2	5.416,9	1.737,	1.3	3.760,	150,66
01	6	00	0,40	5	4	6	40	12,6	81	
4								7		
2	820,0	1.295,	1.30	774,4	2.074	29,16	-	1.3	845,81	560,87
01	0	00	0,40	5	,44		245,95	24,0		
5								8		
					<b>13.17</b>	<b>8.945,2</b>	<b>6.850,</b>	<b>6.5</b>	<b>5.383,</b>	<b>3.562,11</b>
					<b>4,78</b>	<b>0</b>	<b>55</b>	<b>02,0</b>	<b>09</b>	
								<b>0</b>		
						<b>B1 =</b>	<b>0,52</b>		<b>SSR/S</b>	<b>30,82%</b>
						<b>(X-</b>			<b>ST =</b>	
						<b>XM)(Y-</b>			<b>R2</b>	
						<b>YM) /</b>				
						<b>(X-XM)<sup>2</sup></b>				
						<b>YM -</b>	<b>897,7</b>		<b>R</b>	<b>63,10%</b>
						<b>B1(XM)</b>	<b>0</b>			

Source: (Banco Central of Ecuador, 2016) and (PROEcuador, 2016).

Note: The symbology for the development of the method of square minimums formulas, is the following:

- $YM = \text{Media de } Y.$
- $XM = \text{Media de } X.$
- $SST = \text{Sumatoria de } (Y-YM)^2$
- $SSE = \text{Sumatoria de } (Y-YPRIMA)^2$
- $SSR = \text{Sumatoria de } (YPRIMA-YMEDIA)^2$
- $YPRIMA = \{YM - B1(XM)\} + (B1 * X)$

### Discussion

The discussion of the results is carried out through the verification of the results obtained with the expert's criteria about the prognosis of the flowers evolution after the rupture of the ATPDEA in 2013, in this respect the criteria in favor and against of this economic measure adopted by the Ecuadorian government are emphasized:

- Cristian Espinosa, maximum representative of the Chamber of Commerce Ecuadorian - American, indicated that the rupture of the ATPDEA, who will end up paying the tariff of the Ecuadorian products exported to the American market will be the North American importer, therefore in the long term the businessman of the United States will look for providers of nations that sell without tariffs (Colombia, Peru or Central American Nations), replacing the Ecuadorians, generating the loss of competitiveness of the Ecuadorian exporters (Immediato, 2013).

- Cely pointed out that there are managerial groups that are alarmed by the extinction of the ATPDEA, and accepted “not to neglect the problem, but yes standing it out”, as answer to the voices of nervousness of the country. The official said that “the country is prepared” to leave ATPDEA and that exist national strategies focused to exhibit products with added value and to gain growing markets (Pontificia Universidad Católica de Quito 2013).
- The Ambassador of Ecuador in the United States, Cely emphasized that the Ecuadorian government does not leave the businessmen alone, therefore the Certificates of Tributary Fertilizer (CAT) were created as strategy to minimize the negative impact of the ATPDEA, because of not maintaining the Base Aérea of Manta the government saved 23 million dollars, which it is possible to return the tariffs to the exporter so that it does not increase the costs of the products (flowers) commercialized to the United States, criterion that was shared by Xavier Cárdenas, general director of SENAE, he said that CAT will be beneficial for the exporters, because it will compensate the payment of tariffs of products that enter on the American market (Agro, 2013).

The general manager of Pro Ecuador, Maria Fernanda de Luca, said that another strategy is the search of alternative markets for the exports of the Ecuadoran products that would not be already benefited by the ATPDEA, as it is the case of the flowers (Telégrafo, 2013).

On one hand, it was possible to observe that in the year 2014 there was affectation in the exports of the flower sector, because these drooped in relation to 2013, while the Colombians increased, but also it was experienced a recovery of 2015 where there was the opposite effect, increase of the Ecuadorian exports of flowers and decrease of the Colombians, that is to say, that the entering strategies to new markets and the certificate CAT gave good results in 2015.

Consequently, from the obtained results it is showed that although a problem existed, due to the elimination of the ATPDEA on the part of the Ecuadoran government, which affected the tendency of growth of the flower Ecuadorian exports in the year 2014, that was superior for the increase of the flower exports of Colombia, nevertheless the recovery of this national productive sector in 2015 that was better than the decrease of the flower exports experienced by Colombia, the second world producer of this good, revealed that this effect was not so adverse as it was predicted in some moment by the representatives of some productive sectors of the country, in spite of its initial affectation in the international trade of Ecuador, especially with the United States in the flowers affairs.

### **Conclusion**

The flower exports of Ecuador in the period 2011 – 2015 had an irregular, increasing tendency in the year 2012 and 2013, decreasing in 2014, increasing again in 2015, demonstrating a drop in 2014, the later immediate period of the rupture of the ATPDEA on the part of the central government, that is to say, an affectation that corroborates the hypothesis, but also a recovery in 2015.

The flower exports of Colombia in the period 2011 – 2015 had an irregular, increasing tendency in the year 2012, 2013 and 2014 but decreasing in 2015, demonstrating an increase in

2014 (the later immediate period of the rupture of the ATPDEA on the part of the Ecuadorian government) and a drop in 2015, where the Ecuadorian exports were recovered.

The development of the flower exports of Ecuador in the period 2011 – 2015 with the elimination of the ATPDEA, was negative in 2014, that is to say, that this political-economical measurement taken by the Ecuadorian government, affected in a negative way the international trade of flowers of the Ecuador in 2014, where on having been compared with the international trade of flowers of Colombia, the second world producer of this agricultural good, was negative because the nearby country increased its exports, nevertheless, the evidenced recovery of the country in the flower exports, which was better than the descent experienced by Colombia, showed that the national governmental measurement, only caused a light affectation to the flower producing sector.

This means that spite of the drop of the exports of Ecuadorian flowers after the rupture of the ATPDEA, the sector has been able to recover from on getting more competitive than Colombia in 2015, being the nearby country the second world producer of this agricultural good.

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