

Understanding ENSO and the Real Effect on Tropical Commodities

Making dollars and sense out of El Niño, La Niña and other weather anomalies

SUMMARY AND CONCLUSION

- While there is sometimes rampant speculation that El Niño and La Niña have a profound influence on the world production of various crops, the relationship is in fact more complex than a simple increase or decrease. The effects can vary significantly from one commodity to another even in the same country at various times of the year and depending on the intensity of the change in climatic conditions as a result of these events.
- In the past three decades, the tropics have experienced a rise in average precipitation, which skews data and makes analysis of the impact of the changes of the eastern Pacific Ocean's temperature and atmospheric conditions even more complex, but some powerful effects are still very apparent, even when it may be difficult to prove statistically with a high correlation. As we move into 2010, El Niño conditions will be weakening, but still present. This could have significant consequences on many of the world's top producers of all three crops analyzed in this report: cocoa, coffee and sugar. Some of the potential climatic conditions are increased rain in some places damaging crops and droughts causing lower yields, while more rainfall in other places may aid in crop growth and less rain during harvesting can significantly increase the amount of crop produced. Through the exhaustive analysis undertaken for this report, these trends and probable result on output for the top producing countries have not only been identified but also quantified as best possible.
 - The total world production of cocoa is reduced more than 5% in El Niño years, while a 4% increase was marked during La Niña years.
 - Coffee production can be affected by solar activity; Brazilian output is lower than average during MAS years.
 - Total world sugar production seems to be largely unaffected by ENSO events, with one country's increased output offsetting large losses in others.
- The production of cocoa, coffee, and sugar, is more effectively analyzed by looking at specific locations in which the crops are grown. The effects of El Niño and La Niña are varied worldwide, and this causes different outcomes on production by region. There are major exceptions to the common thinking that El Niño is simply bad for crops and La Niña is good. For example:
 - When 'moderate' and 'severe' episodes of La Niña are analyzed, the fall in Brazilian Cocoa production is a massive 15% with a strong correlation of 0.936
 - Chinese sugar output increases by 1.25% with a strong positive correlation of 0.433 during 'moderate' and 'severe' El Niño episodes
 - El Niño episodes increased Colombian Coffee output by 3.47%, while 'severe' La Niña events reduced it by 5.8%
- While precipitation and temperature data was the primary consideration in the study, there are often other extraneous variables that can bear influence on production prospects, with price always being a key factor. This, along with a myriad of other reasons was examined to validate the findings or discredit them and these are also discussed at length for each commodity and particular country under review.

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