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POSSIBLE EFFECTS OF CLIMATE PARAMETERS ON AGRICULTURE IN THE CARIBBEAN (Introduction & Conclusion)

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INTRODUCTION

Sustainable agriculture in the tropics, where temperature is not critical as a limiting factor, is critically dependent upon moisture at the rooting zone, whether this moisture be supplied by rainfall or by irrigation. Long term climate forecasts are therefore critical input components insofar as long range agricultural planning is concerned.

Global climate changes induced by progressive increases in the atmospheric concentration of carbon dioxide (CO₂) and other radiatively active trace gases are likely to occur within the next four to six decades. An effective doubling of CO₂ concentration would very likely bring about large perturbations in the present-day climate, notably an increase in temperature and absolute humidity within the near surface air layer, a decrease in net terrestrial and global solar and hence net radiation and modifications in nebulosity and in the annual regime of precipitation. Furthermore, these changes of key climatic parameters would undoubtedly influence such agrometeorological variables as precipitation, evapotranspiration and soil moisture.

Agriculture is one of the sectors of the global economy that is most sensitive to climate changes. A climate warming caused by an equivalent doubling of atmospheric CO₂ can have severe repercussions for agricultural production. Several

studies, have examined the potential impacts of a climate change due to a doubling of atmospheric CO₂ on agriculture in different regions of the world.

We focus upon the anticipated changes of a variety of variables including global solar radiation, and upon how these changes could conceivably influence agricultural productivity and production in the Caribbean basin. This inquiry is of major importance, since agriculture is a key component of the economy of the Region.

CONCLUSION

Effective CO₂ induced climate changes would have an important impact on such critical agroclimatic parameters as temperature, precipitation and humidity. In the Caribbean basin, where precipitation is the key parameter, it would seem that some regions would experience a longer and more severe dry season and this would call for a greater dependence on irrigation for agriculture. In other areas increases in precipitation are projected, especially in the dry season and this would lead to less dependence on irrigation for agriculture.

It must be cautioned that these results, though highly scientific, are somewhat speculative. However, the nature and extent of these changes seem very probable and their impacts on agriculture in the Caribbean should be given serious attention, especially in light of the fact that these changes are projected to occur within the next 50 to 60 years.