

same price and the producer gains on all unit levels which are lower than the total sale. This is because the market price exceeds the minimum the producer needs. This gain is called producer's surplus, and is represented by the area AP_1B , the area above the supply curve bounded by the market price (Figure 7-9).

Changes in the value of this producer's surplus are interpreted as a measure of welfare change. This change causes a supply shift from S to S_1 , due, for example, to an increase in crop yields from reduced LRTAP (Figure 7-10).

The area $ABCE$ represents the welfare gain to the producer caused by a shift in the supply curve from S to S_1 . The minimum price required to supply each level of output is now lower, and is everywhere further from the market price received by the producer.

Changes in net social welfare caused by LRTAP effects on marketable commodities can be determined by examining the net change in consumer's and producer's surpluses. Suppose, for example, that the reduction of LRTAP deposition results in an increased supply of some product. The supply curve has then shifted to the right from S to S_1 , while the demand curve for the product remains stationary at D , (Figure 7-11).

The area EP_2C is the new producer's surplus, caused by the price fall due to the supply increase, compared to AP_1B at the original supply and price levels. Producer's surplus changes for two reasons. The producer's surplus is increased by $EAFC$ as a result of increased production at lower cost, with a given market price. Producer's surplus decreases by P_2P_1BF a result of market pressures decreasing output prices and stimulating production. The net change in surplus is therefore $ABCE$.