APPENDIX - REVIEW OF RELEVANT ECONOMIC CONCEPTS

Two basic economic concepts which provide a measure of changes in social welfare (satisfaction) are consumer's surplus and producer's surplus. Changes in these measures are regarded as being the most theoretically relevant indicators of social welfare loss or gain, resulting from specific activities or events.

A.1 Consumer's Surplus

Traditional economic theory presumes that the individual consumer is the best judge of his own personal well-being or utility given currently available information. If an individual is made better off, other things being equal, then his social well-being or welfare is increased.

The individual consumer allocates his money income across the various commodities in such a fashion that he maximizes his welfare or utility. In general, his desired purchase of a commodity will depend upon his tastes, the prices of all goods, and his income.

The demand curve graphically represents the relationship between the desired purchase of a commodity and its price (or the willingness-to-pay). For each additional unit, the consumer is willing to pay less than for the previous unit. Hence, the curve slopes down to the right. This is called the ordinary demand curve or the Marshallian demand curve. If we assume that more of the good will be purchased at lower prices if prices fall (a "normal" good), then a consumer's ordinary demand curve is represented in Figure 7-5.

A point on the demand curve is the maximum price that the individual would be willing to pay for a specified amount of good, and is noted by an ordered pair (x, p). Alternatively, for a given price p, x represents the most the consumer would willingly purchase. A maximum price exists for every potential consumption level for the good, and is given as the relevant p-point on the demand curve.

Suppose that the commodity sells in the market for P_1 and the consumer purchases X_1. The consumer's expenditure on x is $P_1 X_1$ (price times quantity). The triangular area denoted P_1AB, which lies above the expenditure rectangle OP_1BX_1 is what economists call the Consumer's Surplus. It is a surplus, since it represents a saving to the individual in terms of what he would have been prepared to pay for levels of consumption smaller than X, as shown by the associated prices on the demand curve. Instead of paying the maximum price for each level of commodity x, the consumer pays P_1 for all units. If all of the savings are added up, then we obtain the area P_1AB. Since the price is given in money units, consumer surplus is a monetary measure. The area OP_1BX_1, plus the area P_1AB (consumer expenditure plus consumer surplus), is a measure of the gross benefits to the individual of consuming X_1 units. Consumer's