From: TCox
Sent: Tuesday, 18 September 2012 2:31 AM
To: Carling, Trish (SEN)
Subject: Re: FW: Risk Estimation Matrix - IRA Pineapples

Trish, I am curious about how the risk estimation matrix (Table 2.5) is used with uncertain inputs. Suppose that the "Likelihood of pest entry, establishment, and spread" is uncertain, and is judged to be equally likely to be "High" or "Extremely low" (e.g., depending on whether a pest is able to survive and reproduce under local conditions, which is quite uncertain). And suppose that "Consequences" are also judged equally likely to be either "Very low" or "Extreme," depending on whether the basic reproductive rate for the pest under local conditions is less than 1 or greater than 1 (also uncertain). Thus, there are four possibilities for which cell in Table 2.5 the risk falls in: (Likelihood, Consequence) = (High, Very Low), (High, Extreme), (Extremely low, Very Low), (Extremely low, Extreme). Their corresponding risks, from Table 2.5, are: Very low risk, Negligible risk, Negligible risk, Low risk).

In this situation, with some uncertainty about the correct qualitative values for Likelihood and Consequence (and hence about risk), what risk rating would be assigned? Does the answer depend on how uncertainties about Likelihood and Consequence are correlated? I do not find guidance for dealing with uncertainty about inputs in the Decision rules in Table 2.4. But I think this uncertainty should be made clear, as part of the "Uncertainty characterization" or "Uncertainty analysis" phase of risk assessment.

I also think it would be useful to explicitly show risks for different times frames (e.g., 1 year, 10 years, 100 years), since a risk that has one rating on a time scale of a few years may have a different rating on a longer time scale. This is partly recognized in the discussion of an assumed one-year volume, but the rest of the analysis, and the use of Table 2.5, do not make clear when the break-points are for time horizons over which the risk should be reclassified.

Might it be possible to clarify these points (i.e., treatment of uncertainty about likelihood and consequence evaluations, and showing how quickly risk accumulates over time)?

Thanks and Best,

-- Tony