“Risk” and “uncertainty” are two terms basic to any decision-making framework. Risk may be characterized as imperfect knowledge in which the probability of various outcomes are known but uncertainty exists when these  probabilities are unknown.. For Risk by knowing the probable out come we can mitigate the risk. But we can’t predict the outcome in as it is uncertain, it may happen or may not happen. Cox (2011) looks into the works of Professor Aven, who has been trying to clarify the importance of the term “Scientific uncertainty” for the use in risk management and policy decisions. Cox uses three examples in his 2011 work to counter some of the misconceptions about predictive models.

1. In his first example he considered a model with a notation Z=G(X). where X is an uncertain input and Z is a model out put. If X has a smaller uncertainty uniformly distributed between 98 and 100 with G(X) as threshold function either 0 or 1then the uncertainty of Z=G(X) will be greater as 50% probabilities of occurring 0 or 1. If X has the larger uncertainty distributed between 0 and 198 since there is a 99.5 % probability that Z= 0. So, it is unclear that why scientific uncertainty should be assumed to be a function of input uncertainty.
2. The second example illustrates how a model might produce proper results (as evaluated by standard deviation, error range, and other metrics) yet still be inaccurate for specific inputs. It states that the model is accurate when the decision we should make is applicable in real world. Furthermore, while certain models are valid for short-horizon predictions, they may not be as good for long-horizon predictions.
3. In third example demonstrates that a correct model is not always causal. Causal it the capacity of one variable influence another. The first variable may bring the second variable into existence or may cause the incidence of second variable to fluctuate. The decision made from a model, as well as the reason for which it was constructed, determine its causality.

In this context it is clear that we must accept the models and uncertainty that matter in risk analysis are too complex to permit useful classifications in terms of concepts such as larger or smaller or accurate or inaccurate. It is therefore with the help of additional useful information need to help controllable inputs to keep outputs with preferred or desired target set.