

# DECISIONS UNDER UNCERTAINTY

IN THIS CASE, IT IS ASSUMED THAT, INFORMATION IS SO SKETCHY THAT PDR'S DESCRIBING THE RANDOM EVENTS CANNOT BE OBTAINED.

IN ORDER TO AID IN DECISION-MAKING, IN SUCH CASES FEW CRITERIA ARE USED. SOME OF THEM ARE DESCRIBED HERE.

HOWEVER BEFORE DESCRIBING THESE, THE GENERAL FORMAT IN WHICH THESE DECISION MAKING PROBLEMS ARE POSED ARE DESCRIBED.

ACTIONS OR DECISIONS	FUTURE RANDOM EVENTS/STATES			
	$\theta_1$	$\theta_2$	$\theta_3$	.....
$a_1$	$O_{11}$	$O_{12}$	$O_{13}$	
$a_2$				
$a_3$				

Where  $O_{ij} \equiv$  the outcome (generally in terms of cost or profit) when action  $a_i$  is taken and the future state turns out to be  $\theta_j$ .

THAT IS, THE PROBLEMS ARE DESCRIBED IN TERMS OF OUTCOMES GIVEN THAT AN ACTION IS TAKEN AND GIVEN THAT THE FUTURE END UP IN A PARTICULAR WAY.

IN ORDER TO CHOOSE, WHICH ACTION,  $a_1, a_2,$  ETC. SHOULD BE TAKEN VARIOUS CRITERIA HAVE BEEN PROPOSED:

- LAPLACE (EXPECTED VALUE) CRITERION
- MINMAX (OR MAXMIN) CRITERION
- MINMAX REGRET CRITERION
- HURWICZ CRITERION