EXCERCISE:

A farmer can analyse his strategies for crops depending on the weather. The states of nature can be rainy, normal or dry. You must decide whether to grow wheat, potatoes or beets.

a) Although he does not know how the year will be, he knows the likelihood of it being rainy (30%), normal (50%) and dry (20%). We have the following matrix of estimated income for every situation:

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Rainy** | **Normal** | **Dry** |
| Wheat | 250 | 290 | 200 |
| Potatoes | 150 | 200 | 250 |
| Beet | -100 | 450 | 350 |

A) Calculate the expected monetary value (mathematical expectation) of each possible strategy growing,wheat, potatoes or beet) and determine which decision would achieve higher results.

B)Assuming the above profit and loss matrix, but in case the farmer did not know and could not estimate the probabilities of the states of nature of the climate (rainy, normal or dry). In this situation of uncertainty, determine the best alternative to choose according to the criteria of

1. Wald or pessimist.
2. Optimistic or maximax.
3. Laplace.
4. Hurwicz, with an optimism coefficient of 0.7
5. Savage.