

SOLUCIÓN: MODELO DEMSTER-SHAFER. MARCO = {H1, H2, H3, H4, H5, H6}. EVIDENCIAS = {PRECIO (P), TRANSPORTE (T), ACUIFERO (A), IMPACTO (I)}

EXPERTOS: n = 1, 2, 3

P → PnF (H4, H5) → F                      Y              PnM (H1, H2, H3, H4, H5, H6) → M

T → TnF (H1, H2, H3, H4) → F                      Y              TnM (H1, H2, H3, H4, H5, H6) → M

A → AnF (H1, H2, H3, H6) → F                      Y              AnM (H1, H2, H3, H4, H5, H6) → M

I → InF (H1, H2, H4, H5) → F                      Y              InM (H1, H2, H3, H4, H5, H6) → M

TODOS LOS EXPERTOS ESTÁN DE ACUERDO EN ESTO. POR LO TANTO LO UNICO QUE VARIA SON LOS PESOS:

EXPERTO 1:    P1 (F) = 0.3    P1 (M) = 0.7    T1 (F) = 0.5    T1 (M) = 0.5    A1 (F) = 0.7    A1 (M) = 0.3    I1 (F) = 0.9    I1 (M) = 0.1

EXPERTO 2:    P2 (F) = 0.7    P2 (M) = 0.3    T2 (F) = 0.8    T1 (M) = 0.2    A2 (F) = 0.4    A2 (M) = 0.6    I2 (F) = 0.5    I2 (M) = 0.5

EXPERTO 3:    P3 (F) = 0.4    P3 (M) = 0.6    T3 (F) = 0.5    T3 (M) = 0.5    A3 (F) = 0.9    A3 (M) = 0.1    I3 (F) = 0.6    I1 (M) = 0.4

|                        |                      |                  |
|------------------------|----------------------|------------------|
| Pn/Tn                  | H4, H5 (0.3-0.7-0.4) | M (0.7-0.3-0.6)  |
| H1, H2, H3, H4         | H4                   | H1, H2, H3, H4   |
| (0.5-0.8-0.5)          | (0.15-0.56-0.20)     | (0.35-0.24-0.30) |
| H1, H2, H3, H4, H5, H6 | H4, H5               | M                |
| (0.5-0.2-0.5)          | (0.15-0.14-0.20)     | (0.35-0.06-0.30) |

|           |      |                |        |      |      |
|-----------|------|----------------|--------|------|------|
|           | H4   | H1, H2, H3, H4 | H4, H5 | M    | SUMA |
| EXPERTO 1 | 0.15 | 0.35           | 0.15   | 0.35 | 1.00 |
| EXPERTO 2 | 0.56 | 0.24           | 0.14   | 0.06 | 1.00 |
| EXPERTO 3 | 0.20 | 0.30           | 0.20   | 0.30 | 1.00 |

|   |                                    |                                    |
|---|------------------------------------|------------------------------------|
| An/In                                   | H1, H2, H3, H6 (0.7-0.4-0.9)       | M (0.3-0.6-0.1)                    |
| H1, H2, H4, H5<br>(0.9-0.5-0.6)         | H1, H2<br>(0.63-0.20-0.54)         | H1, H2, H4, H5<br>(0.27-0.30-0.06) |
| H1, H2, H3, H4, H5, H6<br>(0.1-0.5-0.4) | H1, H2, H3, H6<br>(0.07-0.20-0.36) | M<br>(0.03-0.30-0.04)              |

|           | H1,H2 | H1,H2,H4,H5 | H1,H2,H3,H6 | M    | SUMA |
|-----------|-------|-------------|-------------|------|------|
| EXPERTO 1 | 0.63  | 0.27        | 0.07        | 0.03 | 1.00 |
| EXPERTO 2 | 0.20  | 0.30        | 0.20        | 0.30 | 1.00 |
| EXPERTO 3 | 0.54  | 0.06        | 0.36        | 0.04 | 1.00 |

|                                    |                                 |  |                                  |  |
|------------------------------------|---------------------------------|--|----------------------------------|--|
| (PnTn/AnIn)                        | H4 (0.15-0.56-0.20)             | H1, H2, H3, H4 (0.35-0.24-0.30)          | H4, H5 (0.15-0.14-0.20)          | M (0.35-0.06-0.30)                       |
| H1, H2<br>(0.63-0.20-0.54)         | VACIO<br>(0.0945-0.1120-0.1080) | H1, H2<br>(0.2205-0.0480-0.1620)         | VACIO<br>(0.0945-0.0280-0.1080)  | H1, H2<br>(0.2205-0.0120-0.1620)         |
| H1, H2, H4, H5<br>(0.27-0.30-0.06) | H4<br>(0.0405-0.1680-0.0120)    | H1, H2, H4<br>(0.0945-0.0720-0.0180)     | H4, H5<br>(0.0405-0.0420-0.0120) | H1, H2, H4, H5<br>(0.0945-0.0180-0.0180) |
| H1, H2, H3, H6<br>(0.07-0.20-0.36) | VACIO<br>(0.0105-0.1120-0.0720) | H1, H2, H3<br>(0.0245-0.0480-0.1080)     | VACIO<br>(0.0105-0.0280-0.0720)  | H1, H2, H3, H6<br>(0.0245-0.0120-0.1080) |
| M<br>(0.03-0.30-0.04)              | H4<br>(0.0045-0.1680-0.0080)    | H1, H2, H3, H4<br>(0.0105-0.0720-0.0120) | H4, H5<br>(0.0045-0.0420-0.0080) | M<br>(0.0105-0.0180-0.0120)              |

#### AGRUPANDO TERMINOS

|          | VACIO  | H1H2   | H4     | H1H2H4 | H4H5   | H1H2H4H5 | H1H2H3 | H1H2H3H6 | H1H2H3H4 | M      | SUMA  |
|----------|--------|--------|--------|--------|--------|----------|--------|----------|----------|--------|-------|
| EXPERTO1 | 0.2100 | 0.4410 | 0.0450 | 0.0945 | 0.0450 | 0.0945   | 0.0245 | 0.0245   | 0.0105   | 0.0105 | 1.000 |
| EXPERTO2 | 0.2800 | 0.0600 | 0.3360 | 0.0720 | 0.0840 | 0.0180   | 0.0480 | 0.0120   | 0.0720   | 0.0180 | 1.000 |
| EXPERTO3 | 0.3600 | 0.3240 | 0.0200 | 0.0180 | 0.0200 | 0.0180   | 0.1080 | 0.1080   | 0.0120   | 0.0120 | 1.000 |

CONFLICTO EXPERTO 1 =  $K_1 = 0.2100 \rightarrow$  FACTOR DE NORMALIZACION DEL EXPERTO 1 = 1.266

CONFLICTO EXPERTO 2 =  $K_2 = 0.2800 \rightarrow$  FACTOR DE NORMALIZACION DEL EXPERTO 2 = 1.389

CONFLICTO EXPERTO 3 =  $K_3 = 0.3600 \rightarrow$  FACTOR DE NORMALIZACION DEL EXPERTO 1 = 1.563

#### RESULTADOS NORMALIZADOS

|          | H1H2 | H4   | H1H2H4 | H4H5 | H1H2H4H5 | H1H2H3 | H1H2H3H6 | H1H2H3H4 | M    | SUMA |
|----------|------|------|--------|------|----------|--------|----------|----------|------|------|
| EXPERTO1 | 0.56 | 0.06 | 0.12   | 0.06 | 0.12     | 0.03   | 0.03     | 0.01     | 0.01 | 1.0  |
| EXPERTO2 | 0.08 | 0.47 | 0.10   | 0.12 | 0.03     | 0.07   | 0.02     | 0.10     | 0.03 | 1.0  |
| EXPERTO3 | 0.51 | 0.03 | 0.03   | 0.03 | 0.03     | 0.17   | 0.17     | 0.02     | 0.02 | 1.0  |

LA UNICA HIPOTESIS INDIVIDUAL QUE APARECE DURANTE TODO EL PROCESO DE RAZONAMIENTO ES –H4- POR LO TANTO:

CREDIBILIDAD-EXPERTO-1 (H4) = 0.06

PLAUSIBILIDAD-EXPERTO-1 (H4) =  $0.06+0.12+0.06+0.12+0.01+0.01 = 0.38$

INTERVALO DE CONFIANZA EXPERTO-1 (H4) = [0.06 , 0.38]

CREDIBILIDAD-EXPERTO-2 (H4) = 0.47

PLAUSIBILIDAD-EXPERTO-2 (H4) =  $0.47+0.10+0.12+0.03+0.10+0.03 = 0.85$

INTERVALO DE CONFIANZA EXPERTO-2 (H4) = [0.47 , 0.85]

CREDIBILIDAD-EXPERTO-3 (H4) = 0.03

PLAUSIBILIDAD-EXPERTO-3 (H4) =  $0.03+0.03+0.03+0.03+0.02+0.02 = 0.16$

INTERVALO DE CONFIANZA EXPERTO-1 (H4) = [0.03 , 0.16]

INTERPRETACION: A PESAR DE QUE EL UNICO EMPLAZAMIENTO QUE PARECE SER POSIBLE, Y EN EL QUE TODOS PARECEN ESTAR DE ACUERDO, ES H4, LOS EXPERTOS 1 Y 3 (RESPECTIVAMENTE “MEDIO AMBIENTE” Y “COMPAÑÍA DE AGUAS”) VAN A TENER QUE ACEPTAR TRAS LA NEGOCIACION LOS ARGUMENTOS DEL EXPERTO 2 (REPRESENTANTE MUNICIPAL)... PODEROSO CABALLERO ES DON DINERO.