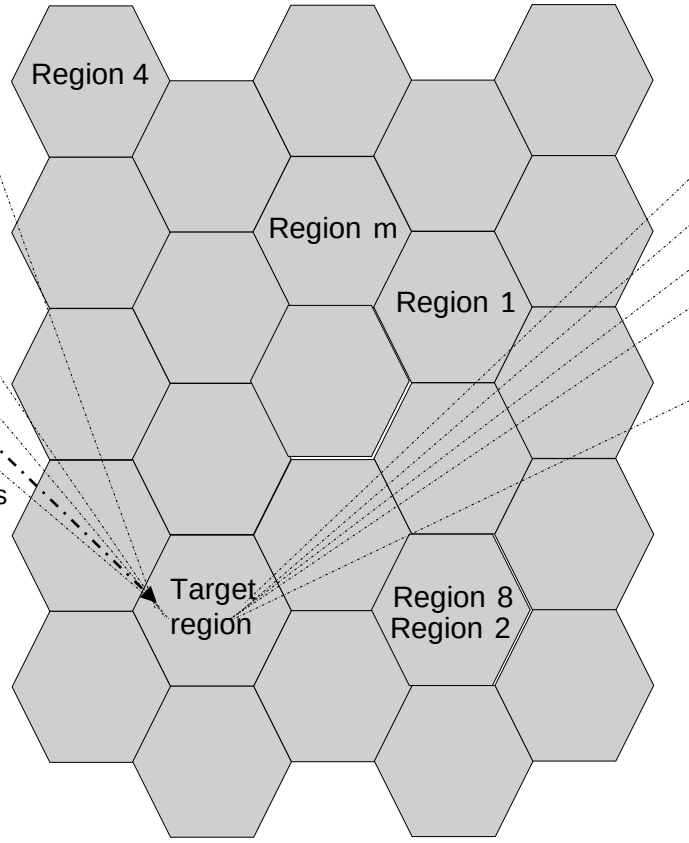
Self Organizing maps for Pest Profile Analysis

A– Input matrix

	Species1	*Species2*	*Species3*	*Species4*	**…**	*Species n*
Region 1	1	1	1	0	…	1
Region 2	0	0	0	1	…	1
Region 3 (target region)	0	1	1		…	1
Region 4	0	0	1	0	…	1
…	…	…	…	…	…	1
Region m	1	0	1	0		0

– · – · – · – · – Weight vector per species (w1, w2, … wn)

B– SOM output map



C- Risk list for the target region

Rank	Species	Risk index	Present or Absent
1	Species 615	0.82	Present
2	Species 3	0.79	Absent
3	Species 70	0.73	Absent
4	Species 5	0.69	Absent
…	…	…	…
n	Species n	0.0	Present

1- Choose a target region to conduct the analysis (A).
2- Obtain the input matrix of coded presence/absence occurrence for global pest species Each row of the matrix is a regional pest profile (A).
3- Introduce the occurrence matrix as an input in the self-organizing maps (A and B).
4- Obtain a classification map of the regions according to their pest profile similarity (B).
5- Obtain the weights per species for the cell of the map where the target region is clustered in (B).
6- Create a risk list for the target region using the weight value as risk index (C).
7- Rank the species according to their risk index for the target region (C).
8- Prioritize the species that are still absent in the target region according to their rank in the risk list. (C)