

## HDCA-OPHI Summer School, Delft 2011

### Exercise on time decomposition of Alkire-Foster measures

Consider the following matrices of deprivations:

People\dimensions	First year				Second year			
	I	II	III	IV	I	II	III	IV
1	1	1	0	1	0	0	0	1
2	0	0	0	1	1	1	1	1
3	0	0	0	0	0	1	0	0
4	1	1	1	1	1	1	1	0
5	1	1	0	1	0	1	0	0
6	0	0	0	1	1	0	0	0
7	0	1	0	0	0	1	0	0
8	1	1	0	0	0	1	0	1
9	0	0	0	1	0	0	0	1
10	0	0	1	0	0	0	1	1

In the table a value of “1” in row “l” and column “m” means that person “l” is deprived in dimension “m” (otherwise the value is “0”).

1. Assuming equal weights, compute H, M0 and A for both years and all *natural* multidimensional cut-offs (1, 2, 3, 4).
2. Compute and decompose the percentage change of M0 into changes in H and A, for all natural cut-offs. Prepare graphs based on your results.
3. Compute and decompose the percentage change of H into the probabilities of entering and exiting multidimensional poverty, for all natural cut-offs. Prepare graphs based on your results.