

Appendix 4

Fig. A4.1 Methodical overview of generating Sankey diagrams.

- a) allocation of pull factors mentioned in the combination with push factors. The light blue box shows how a multiple counting of the pull factors occurs. In this example, within the case study Adjei-Nsiah et al. 2004, ‘better climatic conditions’ and ‘better soils or fertile land’ as pull factors were named together with ‘unfavorable climatic conditions’ as well as with ‘poor soil or land degradation’.
- b) Illustration of how the assignment of the pull factors results in the pivot table, which serves as basis for the Sankey diagram.

a) Allocation

Pull factors named in connection with the respective push

Case Study	push factor	pull factor		
Adjei-Nsiah et al. 2004	unfavorable climatic conditions	better climatic conditions	better soils or fertile land	
Aniah et al. 2019	unfavorable climatic conditions	better climatic conditions	increase of income or better opportunities	
Antwi-Agyei and Nyantakyi-Frimpong 2021	unfavorable climatic conditions	increase of income or better opportunities		
Antwi Bosiakoh et al. 2014	unfavorable climatic conditions	increase of income or better opportunities	education opportunities	better infrastructure
Braimoh 2004	unfavorable climatic conditions	increase of income or better opportunities	available land	
Goldbach 2017	unfavorable climatic conditions	increase of income or better opportunities	social networks	education opportunities
Rademacher-Schulz 2014	unfavorable climatic conditions	better soils or fertile land		
Adjei-Nsiah 2004	poor soil or land degradation	better climatic conditions	better soils or fertile land	
Braimoh, 2004	poor soil or land degradation	increase of income or better opportunities	available land	

b) Matrix

Pivot table as basis for Sankey diagram

push factor	pull factor									sum = number in Sankey diagram
	better climatic conditions	better soils or fertile land	increase of income or better opportunities	available land	access to market	education opportunities	social networks	better infrastructure	food security	
unfavorable climatic conditions	3	2	6	2		2	1	1		17
poor soil or land degradation	3	1	3	2				1		10
lack of economic opportunities	1		8	1	1	2	2	1		16
lack of available land	1		1	2						4
poverty	1		2	1			1			5
land scarcity due to pop. pressure			1	1						2
social conflicts			4			1	3			8
political conflicts			2	2						4
poor infrastructure	1		3			2		1		7
food insecurity	1	1	1	1				1		5
sum = number in Sankey diagram	11	4	31	12	1	7	7	5	0	