Supplementary Material

The Example of Section 4 is developed as indicated, for m=6 Regions, n=t=3 goods and technologies, and k=3 factors of production (and hence π=3 factor prices). The **A** matrices for each of the regions can be represented in a large **A*** matrix in which they are represented by each of the 6 regions one below the other, showing each the technical coefficients of Tech 1 (agriculture), Tech 2 (industry) and Tech 3 (services): **Table S1.**

Table S1. Baseline scenario A matrix ($ of input per $ unit of output of each technology in each region)	**Sector**	**Tech_1**	**Tech_2**	**Tech_3**
Region_1_Asia&Oceania	Sector_1	0.2302258	0.0269912	0.0079579
	Sector_2	0.1729722	0.5335908	0.1417215
	Sector_3	0.0897239	0.1325664	0.257959
Region_2_NandLAmerica	Sector_1	0.2570222	0.0135362	0.0032209
	Sector_2	0.1821209	0.4112538	0.1094513
	Sector_3	0.1733603	0.1735145	0.2458267
Region_3_EU	Sector_1	0.1945293	0.0141654	0.0036485
	Sector_2	0.2093547	0.4315883	0.1209489
	Sector_3	0.1178863	0.1589283	0.309952
Region_4_Spain	Sector_1	0.2241897	0.0193035	0.0034825
	Sector_2	0.1569574	0.4619645	0.1295616
	Sector_3	0.105636	0.1496686	0.2330715
Region_5_Africa	Sector_1	0.1963137	0.0341276	0.0148155
	Sector_2	0.1233616	0.4533608	0.1689896
	Sector_3	0.0893309	0.1471371	0.2114441
Region_6_Rest of the World	Sector_1	0.2535646	0.0158818	0.0063812
	Sector_2	0.1676007	0.4088088	0.1523758
	Sector_3	0.0960693	0.116506	0.2192001

Similarly, the representation of **F** matrices is analogously shown:

Table S2. F matrix of the Baseline scenario.

Region	**Factor**	**Tech_1**	**Tech_2**	**Tech_3**
Region_1_Asia&Oceania	Factor_1	0.131633	0	0
	Factor_2	0.470178	0.29719	0.592378
	Factor_3	0	0.009668	0
Region_2_NandLAmerica	Factor_1	0.083391	0	0
	Factor_2	0.33293	0.392704	0.641582
	Factor_3	0	0.009477	0
Region_3_EU	Factor_1	0.08673	0	0
	Factor_2	0.397342	0.39195	0.565711
	Factor_3	0	0.004219	0
Region_4_Spain	Factor_1	0.07518	0	0
	Factor_2	0.476687	0.367616	0.633884
	Factor_3	0	0.002077	0
Region_5_Africa	Factor_1	0.188696	0	0
	Factor_2	0.423518	0.33202	0.60582
	Factor_3	0	0.033548	0
Region_6_Rest of the World	Factor_1	0.11229	0	0
	Factor_2	0.521084	0.415196	0.640993
	Factor_3	0	0.060001	0

Factor prices (π) are all equal to 1. Factor endowments (**f**) are all in monetary units (million $, exceptionally here one could sum also the Factors in monetary units).

Table S3. f matrix of the Baseline scenario (million $).

Region / Factor	**Factor_1**	**Factor_2**	**Factor_3**

Region_1_Asia&Oceania	344,938	36,208,260	355,868
Region_2_America	96,516	39,639,803	235,807
Region_3_EU	102,128	22,809,641	83,384
Region_4_Spain	6,510	1,648,830	3,366
Region_5_Africa	196,318	5,444,521	213,210
Region_6_Rest of the World	38,517	2,459,290	155,163
Total	**784,928**	**108,210,345**	**1,046,798**

Table S4. F matrix of the Water split H M L with more realistic coefficients (f1).

Regions	Factors	Tech_1	Tech_2	Tech_3
Region_1_Asia&Oceania	Factor_1	0.131633	0	0
	Factor_2	0.452619	0.29689	0.592107
	Factor_3	0	0.009668	0
	Factor_Water_H	0	2.97E-05	8.83E-05
	Factor_Water_M	0	0.001006	0.001008
	Factor_Water_L	0.731007	0.001894	0
Region_2_NandLAmerica	Factor_1	0.083391	0	0
	Factor_2	0.335098	0.38698	0.640546
	Factor_3	0	0.009477	0
	Factor_Water_H	0	0.004386	0
	Factor_Water_M	0	0.011336	0.003634
	Factor_Water_L	0.24611	0	0
Region_3_EU	Factor_1	0.08673	0	0
	Factor_2	0.393777	0.389731	0.563644
	Factor_3	0	0.004219	0
	Factor_Water_H	0	0.002479	0.001377
	Factor_Water_M	0	0.001172	0.001986
	Factor_Water_L	0.1798	0	0
Region_4_Spain	Factor_1	0.07518	0	0
	Factor_2	0.502725	0.367922	0.632612
	Factor_3	0	0.002077	0
	Factor_Water_H	0	0	0.001911
	Factor_Water_M	0	0.000543	0.001433
	Factor_Water_L	0.330007	0.004833	0
Region_5_Africa	Factor_1	0.188696	0	0
	Factor_2	0.402214	0.331794	0.604748
	Factor_3	0	0.033548	0
	Factor_Water_H	0	0.000164	0
	Factor_Water_M	0	0.001506	0.00129
	Factor_Water_L	0.181177	0	0.008878
Region_6_Rest of the World	Factor_1	0.11229	0	0
	Factor_2	0.397236	0.393013	0.622752
	Factor_3	0	0.060001	0
	Factor_Water_H	0	0.030227	0
	Factor_Water_M	0	0.058822	0.053093
	Factor_Water_L	2.237496	0.079237	0.05788

Table S5. F matrix of the Water split H M L with more realistic coefficients with water returns (f2).

Regions	Factors	Tech_1	Tech_2	Tech_3
Region_1_Asia&Oceania	Factor_1	0.131633	0	0
	Factor_2	0.452619	0.29689	0.592108
	Factor_3	0	0.009668	0
	Factor_Water_H	0	2.97E-05	8.83E-05
	Factor_Water_M	0	0.001006	0.001008
	Factor_Water_L	0.731007	0.001894	-4.6E-05
Region_2_NandLAmerica	Factor_1	0.083391	0	0
	Factor_2	0.335098	0.387319	0.6407
	Factor_3	0	0.009477	0
	Factor_Water_H	0	0.004386	-0.00012
	Factor_Water_M	0	0.011336	0.003634
	Factor_Water_L	0.24611	-0.01158	-0.00282
Region_3_EU	Factor_1	0.08673	0	0
	Factor_2	0.393777	0.389831	0.563707

	Factor_3	0	0.004219	0
	Factor_Water_H	0	0.002479	0.001377
	Factor_Water_M	0	0	0.001986
	Factor_Water_L	0.1798	-0.00206	-0.0013
Region_4_Spain	Factor_1	0.07518	0	0
	Factor_2	0.502725	0.367922	0.632693
	Factor_3	0	0.002077	0
	Factor_Water_H	0	0	0.001911
	Factor_Water_M	0	0.000543	0.001433
	Factor_Water_L	0.330007	0.004833	-0.00334
Region_5_Africa	Factor_1	0.188696	0	0
	Factor_2	0.402214	0.331794	0.605027
	Factor_3	0	0.033548	0
	Factor_Water_H	0	0.000164	-0.00104
	Factor_Water_M	0	0.001506	0.00129
	Factor_Water_L	0.181177	-1.5E-05	0.008878
Region_6_Rest of the World	Factor_1	0.11229	0	0
	Factor_2	0.397236	0.393013	0.62439
	Factor_3	0	0.060001	0
	Factor_Water_H	0	0.030227	-0.00925
	Factor_Water_M	0	0.058822	0.053093
	Factor_Water_L	2.237496	0.079237	0.05788