

Supplementary material

Figure S 1. Temporal distribution of establishment of mechanisms

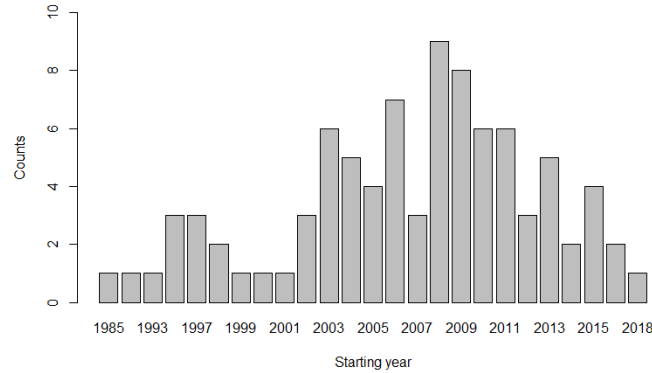


Table S 1. Search string of two-round literature search

First-round search string	
("ecosystem service*" OR "environmental service*") AND ("market*" OR "payment*" OR "trading" OR "trade" OR "compensation") AND "carbon"	
Second-round search string*	
Category 1	("auction" OR "tender") AND "forest" AND "carbon"
Category 2	"market*" AND "forest carbon"
Category 3	("tradable permits" OR "quotas" OR "credits" OR "mitigation banking" OR "concession") AND "forest carbon"
Category 4	("fiscal policy" OR "tax" OR "incentive") AND "forest carbon"
Category 5	"certification" AND "forest carbon"
Category 6	"payment for ecosystem service*" AND "forest carbon"
* The search is based on MBIs classification from (Pettenella et al., 2020)	

Table S 2. Frequency and proportion of actors involved in the reviewed mechanisms (In some cases, there are multiple buyers or intermediaries participating in the mechanisms)

Actor category/ Actor's role	IG	G	D	CG	IPLC	NGO	SO	P
Buyer/demander	15(18%)	31(35%)	16(17%)	9(10%)	NA	7(8%)	NA	51(58%)
Seller/provider	NA	10(11%)	NA	53(60%)	32(36%)	2(2%)	NA	8(9%)
Intermediary/facilitator	4(5%)	36(41%)	3(3%)	8(9%)	1(1%)	27(31%)	11(13%)	25(28%)

Table S 3. Description of variables used in the cluster analysis

Variable	Levels
Continent	1=AF; 2=AS; 3=NA; 4=EU; 5=SA; 6=OC
Spatial scale	1=local; 2=regional; 3=national; 4=international

Funding source	1=public; 2=private; 3=mixed
Forest ownership (*Forest ownership of the country where the mechanism was implemented)	1=All forest land is owned publicly 2=Public ownership predominance 3=Balanced ownership between public and private 4=Private ownership predominance 5=Diverse forest ownership
REDD+	0=No; 1=Yes
CDM	0=No; 1=Yes
JI	0=No; 1=Yes
Government-led PES	0=No; 1=Yes
User-financed PES	0=No; 1=Yes
Cap-and-trade	0=No; 1=Yes
Competitive tenders/auctions	0=No; 1=Yes
Definition of standards, certifications, eco-labelling	0=No; 1=Yes
Offset scheme	0=No; 1=Yes
Corporate social responsibility	0=No; 1=Yes
Public-private contract	0=No; 1=Yes
Subsidies and grants	0=No; 1=Yes
Tax exemption and rebates	0=No; 1=Yes

Table S 4. PC extraction (eigenvalues and variance explained of the first 7 PCs) and factor loadings (only loadings of the first 5 PCs are reported)

	Variable	PC1	PC2	PC3	PC4	PC5	PC6	PC7
<i>PC extraction</i>								
	Eigenvalues	0.21	0.16	0.13	0.12	0.10	0.09	0.09
	% of variance	13.10	10.03	8.06	7.55	6.59	5.86	5.67
	Cumulative % of variance	13.10	23.13	31.19	38.74	45.33	51.19	56.86
<i>PC factor loadings</i>								
Continent	AF	-0.89	-0.19	-0.82	-0.25	0.23		
	AS	-0.34	-0.53	0.31	0.66	-1.19		
	EU	-0.15	1.46	0.78	0.75	0.59		
	NA	0.77	0.33	-0.70	-0.39	0.31		
	OC	1.83	-1.40	-0.21	1.66	-0.01		
	SA	0.12	-0.56	1.18	-1.17	0.23		
Funding source	International	0.62	1.82	-1.49	-1.35	-1.19		
	Local	-0.69	-0.10	-0.05	0.14	-0.10		
	National	1.31	-0.20	-0.17	0.29	0.18		
	Regional	-0.02	0.01	1.14	-0.55	0.54		
	Mixed	-0.67	0.20	0.01	0.07	0.73		
	Private	-0.27	0.66	-0.16	-0.18	-0.54		
Forest ownership	Public	0.73	-0.70	0.12	0.09	-0.12		
	All forest land is owned publicly	-0.99	-0.42	-0.79	-0.69	-0.11		
	Balanced ownership between public and private	0.22	0.20	1.50	-0.98	0.49		
	Diverse forest ownership	0.07	-0.15	0.03	-0.83	0.58		
	Private ownership predominance	0.09	0.71	-0.52	0.28	0.26		
	Public ownership predominance	0.04	-0.70	0.24	0.48	-0.63		
Policy instruments	No. REDD	0.45	0.28	0.11	0.17	-0.11		
	REDD	-0.91	-0.57	-0.23	-0.35	0.23		
	CDM	-0.65	-0.67	-0.55	0.72	-0.92		
	No. CDM	0.06	0.07	0.06	-0.07	0.09		
	JI	-0.06	-0.83	2.25	-1.83	0.80		
	No. JI	0.00	0.01	-0.03	0.02	-0.01		
	Government-led PES	1.35	-0.49	0.50	-0.54	0.01		
	No. government-led PES	-0.32	0.12	-0.12	0.13	0.00		
	No. user-financed PES	0.04	-0.23	-0.16	-0.14	0.03		

User-financed PES	-0.26	1.35	0.91	0.81	-0.16
Cap-and-trade	1.08	-0.33	-1.04	1.54	2.16
No. cap-and-trade	-0.07	0.02	0.06	-0.09	-0.13
Auction	1.75	-0.23	-1.01	1.02	1.18
No. auction	-0.15	0.02	0.09	-0.09	-0.10
Certification	0.69	1.88	-1.49	-1.07	-1.15
No. certification	-0.05	-0.14	0.11	0.08	0.08
No. offset scheme	0.85	0.43	0.20	-0.30	-0.36
Corporate social responsibility	-0.56	-0.28	-0.13	0.19	0.24
No. corporate social responsibility	-0.6	1.62	1.39	1.47	0.07
No. public-private contract	0.05	-0.14	-0.12	-0.13	-0.01
Public-private contract	0.04	0.00	-0.02	0.00	-0.01
No. subsidies	-0.75	0.05	0.37	0.07	0.24
subsidies	-0.03	0.03	-0.01	-0.04	0.04
No. tax	1.19	-1.46	0.22	1.78	-1.80
Tax	-0.02	0.00	0.01	0.00	0.00