



PROJECT FINAL REPORT

Grant Agreement number: FP7 – 312690
Project acronym: ANAEE
Project title: Infrastructure for Analysis and Experimentation on Ecosystems
Funding Scheme: Combination of CP & CSA
Period covered: from 1st November 2012 to 31st October 2016

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Figures

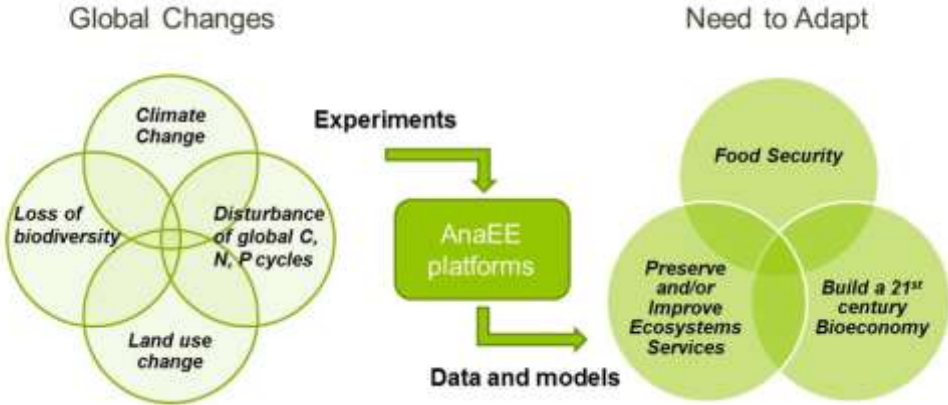


Figure 1. AnaEE through ecosystem experimentation will provide data and models to address main societal challenges.

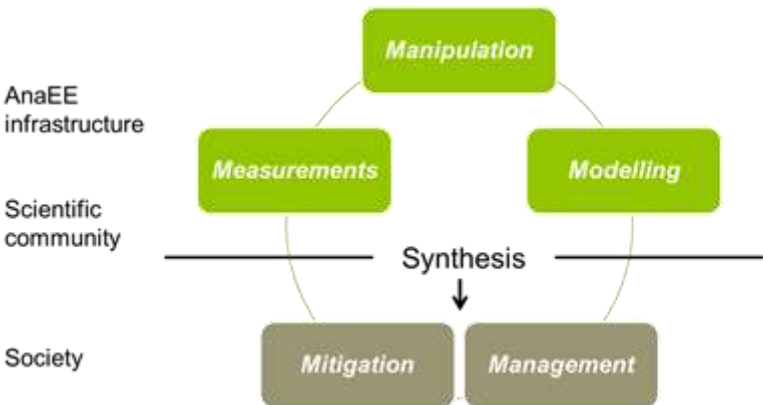


Figure 2. The impact of global changes are measured and modelled using ecosystems manipulated experimentally. The synthesis of these results will allow determining mitigation and management strategies.

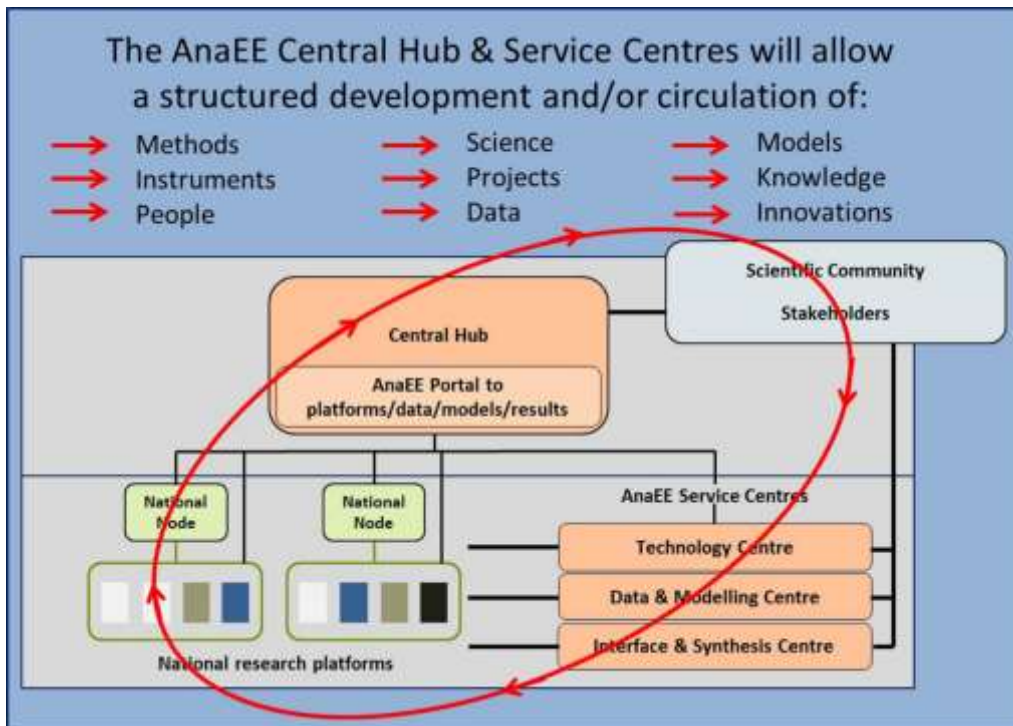


Figure 3. The structure of AnaEE and the services provided through the supra-national entities of AnaEE.

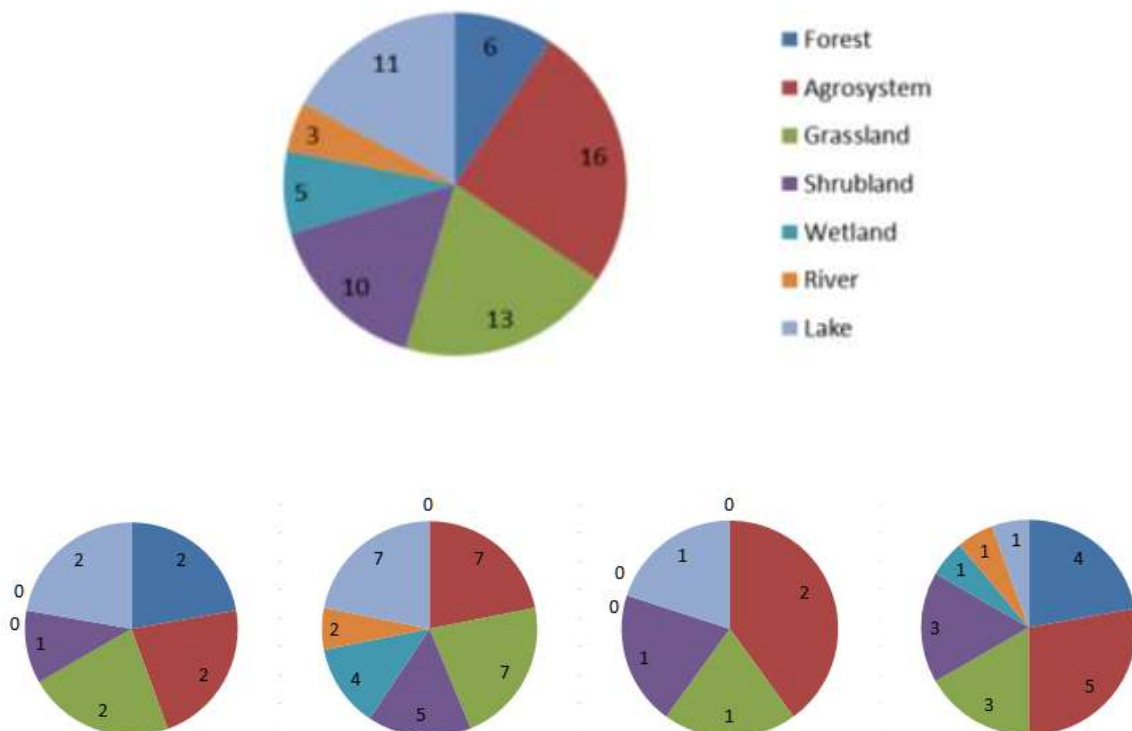


Figure 4. Representation of currently existing experimental installations at the 28 Enclosed platforms across ecosystem types in total (top panel) and in the four assigned climatic zones from left to right (bottom panel) in the order Humid Continental, Humid Oceanic, Mediterranean and Subarctic.



<p>Key Partners CH 1 - 2</p> <p>European Commission</p> <p>National administrations</p> <p>International research Infrastructures (FACCE, GOE, NEON, TERN)</p>	<p>Key activities CH 1 - 3 - 6</p> <p>Coordination Project/Data management Communication/Dissemination Certification/Standardization Quality Control Capacity Building Fundraising</p>	<p>Value Proposition CH 2</p> <p>Links National Platforms and users</p> <p>Enables pan-European research cooperation</p> <p>Coordinates complex multidisciplinary projects</p>	<p>Customer Relationship CH 2</p> <p>National Focal Points</p> <p>Expression of Interest</p> <p>Calls for proposal</p> <p>Calls for pilots</p> <p>Direct promotion</p>	<p>Customer Segments CH 2</p> <p>National Platforms</p> <p>Research Community</p> <p>Policy Makers</p> <p>Industry</p> <p>Educators</p> <p>Civil Society</p>
	<p>Key Resources CH 1 - 3 - 4</p> <p>Central Hub Service Centres National Platforms Raw Data</p>	<p>Certifies and increases competitiveness</p> <p>Increases visibility</p>	<p>Customer Relationship CH 2</p> <p>Web portal</p> <p>Liaising by representatives of the Centres</p>	
<p>Key Resources CH 5</p> <p>Direct personnel costs (salaries) Other direct costs (e.g. travel, durable equipment, consumables, materials) Indirect costs (i.e. overheads) Subcontracting costs (e.g. legal, accounting, auditing services)</p>		<p>Key Resources CH 5</p> <p>Memberships and host contributions EU structural funds (e.g. Horizon 2020 calls for International Development Projects) Access fees Consultancy services Licensing and sponsoring</p>		

Figure 5. The AnaEE business model canvas with references to all Business Plan chapters.

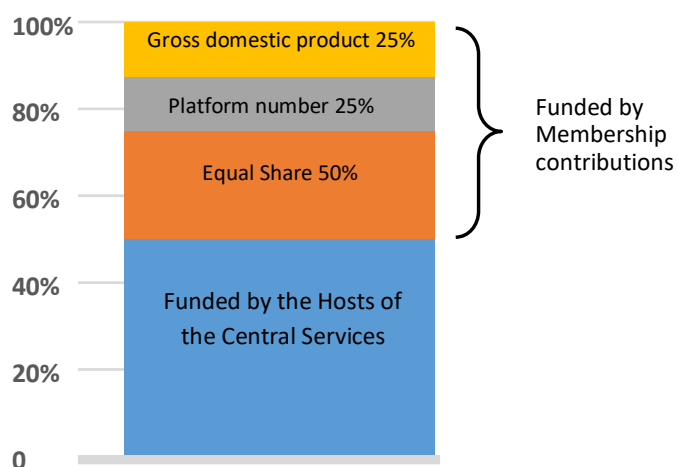


Figure 6. The AnaEE funding model.

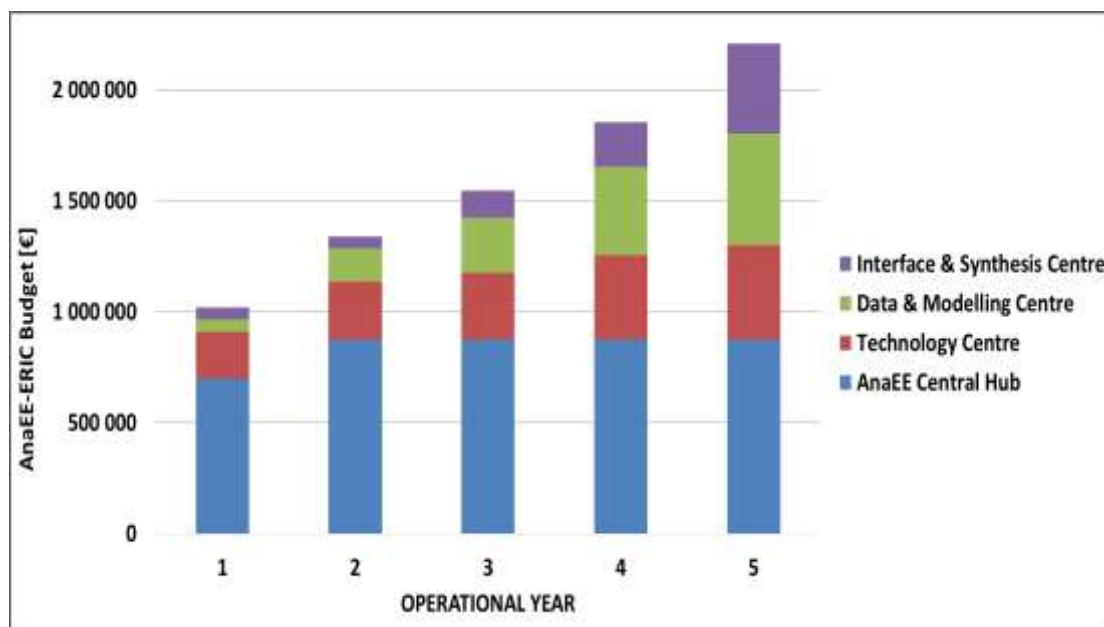


Figure 7. The suggested modular implementation of AnaEE Service Centres over the first five years.



Tables

Table 1. Summary of combinations of ecosystems/pressures/climatic zones that were given a higher than average score of importance by the expert panel (see Table 2), which are missing from the currently existing and proposed Open Air platforms. Green background color indicates that combination is already part of planned upgrades within some of the suggested. Different number of lines for each climatic zone simply indicates how many unique combinations were missing and how condensed this could be presented. For instance, the second line means that in the Humid Continental (HC) climatic zone air pollution is a missing pressure among the current agrosystems, grasslands and shrublands. Combinations in total indicates how many unique combinations are missing for each line (i.e. number of ecosystems x number of pressures for that line), while Climate combinations in total are for the climate-related pressures only.

Climate	Forest	Agrosystem	Grassland	Shrubland	Wetland	River	Lake	Elevated CO ₂	Warming	Precipitation change	Hydrological change	UV	Soil eutrophication	Water eutrophication	Air pollution	Fire	Soil erosion	Desertification	Management	Habitat fragmentation	GMO	Pests	Biodiversity loss	Combinations in total	Climate combinations in total	
HC				x					x	x														2	2	
HC		x	x	x											x										3	
HC	x		x	x												x									3	
HC	x		x	x	x																x				4	
HC		x	x		x																		x ¹		3	
HC					x																			x	1	
HO	x							x																	1	1
HO					x				x																1	1
HO							x			x	x														2	2
HO				x							x										x				2	1
HO	x			x	x	x	x																x		5	
HO					x	x	x																	x	3	
MED	x		x					x																	2	2
MED	x	x	x	x	x		x		x																6	6
MED					x	x	x			x	x														6	6
MED						x	x								x										2	
MED			x												x		x								2	
MED	x	x	x	x												x									4	
MED	x		x	x	x																x				4	
MED	x	x	x	x	x	x	x																x ¹		7	
MED					x	x	x																	x	3	
SA			x			x																		x ²	2	
SA			x			x	x																	x ²	3	
Pressure/ecosystem/climatic zone combinations missing - in total																									71	21

¹ only planned for agrosystem

² only planned for grassland



Table 2. AnaEE climate, pressure and ecosystem matrix, including scores from the expert survey. Most crucial pressures according to the experts are indicated in red. (HO = Humid oceanic, HC = Humid continental, GMO = genetically modified organisms). A value of 40 or higher indicate that this pressure/ecosystem/climatic zone combination is estimated to have an importance above average across all combinations.

	Forest	Agro	Grass	Shrub	Wetland	River	Lake				least valued	most valued
HO	42	38	38	31	29	11	12	Elevated CO2				
HC	43	39	39	32	30	11	13					
Subarctic	39	35	35	30	28	10	12					
Med	44	40	41	34	32	14	15					
HO	59	59	56	50	44	34	39	Climate warming				
HC	67	66	64	55	49	38	46					
Subarctic	80	80	75	66	58	46	55					
Med	68	67	65	58	50	39	44					
HO	53	61	54	47	61	50	47	Precipitation changes				
HC	63	70	62	51	69	58	51					
Subarctic	46	52	47	39	51	41	38					
Med	65	75	66	54	73	62	56					
HO	38	40	43	40	61	59	57	Hydrological changes				
HC	36	39	40	37	58	57	55					
Subarctic	34	38	41	36	57	55	54					
Med	38	43	43	39	64	62	60					
HO	22	25	23	20	21	15	15	UV radiation				
HC	23	27	24	21	22	15	15					
Subarctic	21	25	23	19	21	15	15					
Med	26	31	28	23	28	19	19					
HO	43	37	42	39	41	33	33	Soil eutrophication and pollution (incl. heavy metals, atm. deposition)				
HC	38	33	38	35	38	30	30					
Subarctic	28	25	28	26	27	21	21					
Med	34	31	35	32	34	25	25					
HO	14	14	14	14	40	62	65	Water eutrophication, brownification and pollution (incl. acidification)				
HC	13	13	13	13	35	56	59					
Subarctic	11	11	11	11	27	46	49					
Med	11	11	11	11	32	52	55					
HO	46	41	41	39	34	18	18	Air pollution (including O3)				
HC	51	44	45	41	36	19	19					
Subarctic	40	37	36	32	30	15	15					
Med	47	41	41	38	33	18	18					
HO	38	22	33	33	17	13	15	Fire				
HC	51	30	43	43	23	17	20					
Subarctic	41	25	36	37	19	16	16					
Med	75	45	62	64	32	25	28					
HO	29	47	35	34	27	35	30	Soil erosion				
HC	30	50	38	37	28	35	30					
Subarctic	23	35	27	28	21	24	21					
Med	33	57	43	43	29	36	30					
HO	15	23	21	22	11	12	11	Desertification				
HC	29	39	38	35	22	25	22					
Subarctic	11	17	15	16	8	9	8					
Med	38	54	52	52	31	34	30					
HO	44	51	41	30	32	25	23	Agro-forestry management practices (tillage, fertilizer, grazing, mowing, harvest, breeding...)				
HC	45	54	44	31	33	26	24					
Subarctic	31	35	30	24	23	13	13					
Med	39	48	40	29	31	23	21					
HO	58	26	50	47	54	32	33	Habitat fragmentation				
HC	57	26	50	46	53	32	32					
Subarctic	42	20	34	34	38	21	21					
Med	51	25	47	41	47	30	30					
HO	14	30	21	16	17	17	17	GMO				
HC	14	30	21	16	17	17	17					
Subarctic	10	20	14	12	10	11	11					
Med	15	30	22	17	15	16	16					
HO	46	42	45	40	41	45	45	Pests and invasive species				
HC	44	41	43	38	40	43	43					
Subarctic	43	40	42	38	37	41	41					
Med	49	46	48	41	44	47	48					
HO	52	37	63	42	58	55	58	Biodiversity loss (not a pressure but manipulation needed)				
HC	56	39	68	44	63	56	60					
Subarctic	44	28	50	35	49	44	47					
Med	58	40	70	44	64	58	62					



Table 3. Number of currently existing platform/pressure combinations in total across all suggested Enclosed platforms. Numbers are shown for each climatic zone as well as in total. Humid Continental (HC), Humid Oceanic (HO), Mediterranean (MED), Subarctic (SA).

Pressure	HC	HO	MED	SA	Total
Warming	4	15	3	5	27
Precipitation change	2	13	3	5	23
Biodiversity	2	14	2	4	22
Air pollution	2	11	4	3	20
Elevated CO ₂	4	8	3	3	18
Pests	2	11	1	3	17
Management	2	9	1	4	16
Water eutrophication	2	10	1	2	15
Hydrological change	0	9	1	3	13
Soil eutrophication	1	8	2	2	13
UV	3	6	2	2	13
Soil erosion	1	7	0	1	9
Habitat fragmentation	1	5	1	1	8
GMO	1	3	1	3	8
Desertification	0	3	1	2	6
Fire	0	3	0	0	3



Table 4. Indication (x) of combinations of ecosystems/pressures per climate zone, that were given a higher than average score of importance by the expert panel (see Table 1), which are missing from the currently existing and proposed platforms (solid red dots in Addendum 2 for existing combinations).

<i>Humid continental</i>	Forest	Agrosystem	Grassland	Shrubland	Lake	Wetland	River
Warming						x	
Precipitation change					x	x	x
Biodiversity loss	x			x		x	x
Air pollution							
Elevated CO ₂	x						
Pests					x	x	x
Management							
Water eutrophication							x
Hydrological change			x		x	x	x
Soil eutrophication							
UV							
Soil erosion							
Habitat fragmentation	x			x		x	
GMO							
Desertification							
Fire	x		x	x			