



EDUCATING THE ACTORS OF TOMORROW'S ECONOMY

SYNTHESIS - NOVEMBER 2022



	I GHG emissions (kg CO2eq/kg)	J Raw materials (kg)	K Water consumption (L)
55,00	45,00 ✓	7 000	
19,80	16,20 !	2 520	
14,30	11,70 ✗	1 820	
26,40	21,60 !	3 360	
26,40	21,60 !	3 360	
13,20	10,80 ✗	1 680	
13,20	10,80 ✗	1 680	
26,40	21,60 !	3 360	
13,20	10,80 ✗	1 680	
9,90	8,10 ✗	1 260	
13,20	10,80 ✗	1 680	
13,20	10,80 ✗	1 680	
13,20	10,80 ✗	1 680	
19,80	16,20 !	2 520	
26,40	21,60 !	3 360	
28,60	23,40 !	3 600	
8,80	7,20 ✗	1 280	
13,20	10,80 ✗	1 680	
13,20	10,80 ✗	1 680	
9,90	8,10 ✗	1 260	
2,20	1,80 ✗	580	
40,70	33,30 ✓	5 940	
13,20	10,80 ✗	1 680	
19,80	16,20 !	2 520	
8,80	7,20 ✗	1 280	
4,40	3,60 ✗	640	
13,20	10,80 ✗	1 680	

Vietnam	Canada	39 400	0,15 €
Germany	France	53 100	2,00 €
India	Germany	98 300	0,34 €
Vietnam	Mexico	43 000	0,12 €
India	Canada	57 800	0,11 €
France	Mexico	33 500	2,00 €
France	Germany	19 800	2,00 €
Vietnam	Canada	58 400	0,45 €
USA	USA	37 200	2,00 €
USA	Canada	26 100	2,01 €
		34 700	0,12 €
		58 000	0,12 €
		97 200	0,30 €
		18 600	0,45 €
		59 200	0,61 €
		36 300	0,98 €
		24 900	0,34 €
		35 100	0,10 €
		56 700	1,89 €
		34 300	2,00 €
		17 500	

EDUCATING THE ACTORS OF TOMORROW'S ECONOMY ON ECOLOGICAL ISSUES: AN ESSENTIAL CONDITION FOR THE TRANSITION

The Shift Project offers an operational method to incorporate ecological issues within **management studies**, developed in partnership with Audencia business school and multiple other higher education institutions.



Managers have a decisive role to play in the transition to a low-carbon and resilient society. They need to **mitigate the impacts of their organisations on the environment and participate in adapting society to current disruptions.**

Yet, they are very rarely taught about such issues. **In 2019, only 6% of management programs addressed ecological issues as part of their mandatory courses.**¹

Our economic activity depends on energy and material flows, climatic conditions, and

ecosystems. It must respect the planetary boundaries to be sustainable. **Tomorrow's economic actors must fully integrate this reality.**

Management sciences and its professionals are at the heart of this revolution of ideas and practices. **94% of management lecturers believe that their institution should train students on ecological issues.**²

The urgency is indisputable. This work needs to start as soon as possible.



THIS REPORT OFFERS :

A knowledge and skills framework

A focus on 4 management disciplines:

strategy, marketing, management control, purchasing and logistics

Recommendations for each actor

A curricula transformation guide for the executives and presidents of higher education institutions

Feedbacks from higher education institutions

This report was developed from interviews and workshops with more than **150 representatives** from management higher education professionals.

¹ Mobiliser l'enseignement supérieur pour le climat, The Shift Project, march 2019

² The Shift Project survey of higher education management lecturers (489 respondents)

WHAT DO MANAGEMENT GRADUATES NEED TO KNOW ABOUT ECOLOGICAL ISSUES ?

The **knowledge and skills framework** is a tool for professors and pedagogical managers.

It describes the knowledge and the skills to include in mandatory classes in management. It is complemented with resources to go further.

The knowledge framework amounts to about **165 hours of teaching, including 48h (6 ECTS credits) that are dedicated to the physical constraints and their socio-economic implications.** Beyond those courses, the whole educational journey also needs to contribute to teaching those knowledge and skills.

The actors of tomorrow's economy must:

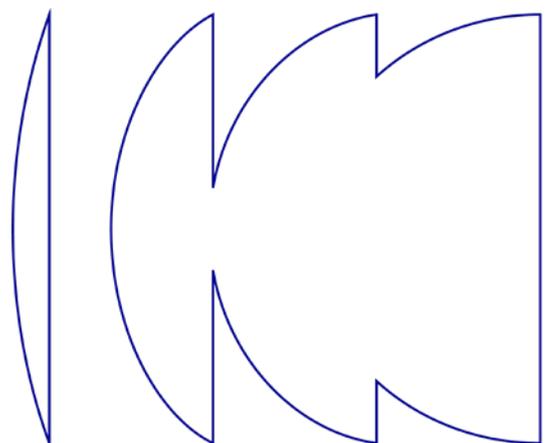
- ▶ **Understand the physical constraints and their implications** for society, economic systems, and organisations
- ▶ **Mobilise natural sciences, engineering sciences, and human and social sciences**
- ▶ **Know the limits of the models** taught in management and economics to take into account the ecological issues
- ▶ **Be able to undertake a scenario analysis with physical constraints**
- ▶ **Conceive business plans that are compatible with a minimum 6% decrease in greenhouse gas emissions annually**
- ▶ **Know how to lead their management and their teams** in a transformation project

- ▶ **Dare to be creative** to reinvent current practices



This knowledge and skills framework is completed with:

- ▶ **A focus on marketing, strategy** (including consulting), **management control, purchasing and logistics studies**, that highlight the knowledge and skills evolution required by the ecological transition.
- ▶ **A focus on digital technologies**, which defines the fundamentals of digital sufficiency. For example, the knowledge of the impacts of digital technologies on greenhouse gas emissions.



THIS REPORT OFFERS:

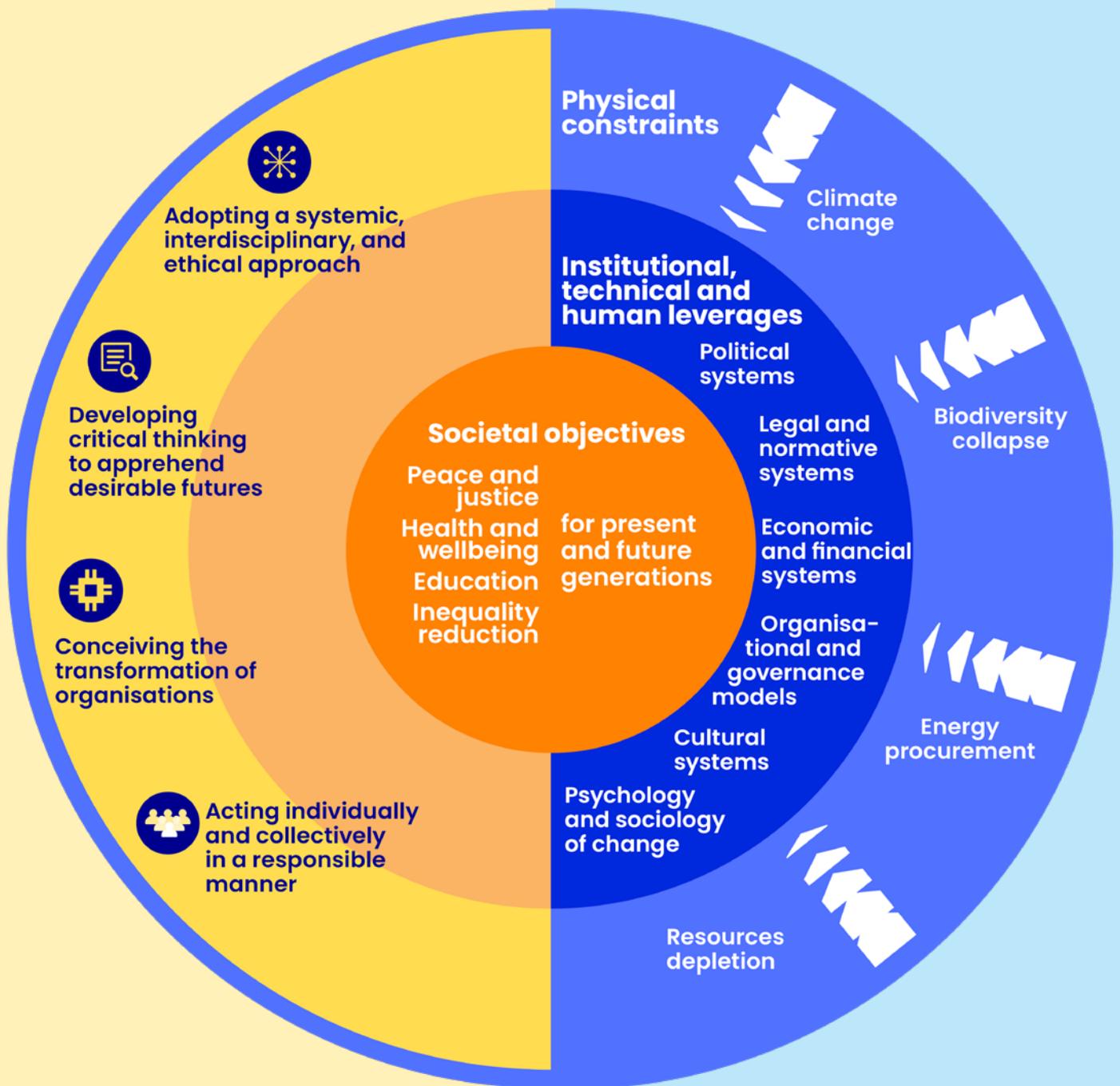
A knowledge and skills framework

A focus on 4 management disciplines

TRAINING THE CITIZEN MANAGER OF THE 21ST CENTURY

SKILLS FOR THE TRANSITION

KNOWLEDGE RELATED TO ECOLOGICAL ISSUES



HOW EACH ACTOR MUST LEAD THE TRANSITION ?

For each recommendation, you will find more details, examples, and resources in the report by looking into the dedicated chapter.

THIS REPORT OFFERS :

A curriculum transformation guide

EXECUTIVES AND PRESIDENTS

Driving the institution's transformation



- ▶ **Train all staff:** at least 10h for management and administrative staff, and 48h for professors, in order to understand the implications of the planetary boundaries on management teaching
- ▶ **Redefine the university's strategy** to include the ecological issues with ambition and coherence in the teaching, research, campus, practices, and governance
- ▶ **Mobilise human and financial resources** to lead the transformation: **3% of the operating budget for at least 3 years**
- ▶ **Diagnose the starting point** of the institution and identify the assets it can rely on (professors, partners, etc.)

- ▶ **Organise a consultation** with all stakeholders of the institution to **define a common knowledge and skills framework**
- ▶ **Drive the integration of this common framework in all programs** in a coherent manner
- ▶ **Work together** with other institutions to move forward faster

PROFESSORS

Training oneself to train others



- ▶ **Train oneself** (48h on planetary boundaries and their consequences on society and the economy) and **update course content** according to the knowledge and skills common grounds
- ▶ **Publicly share the courses** and teaching materials to accelerate the teachings' evolution
- ▶ **Report the expectations** from students and professors **to the institution** administration
- ▶ **Switch from a posture of knowledge to a posture of facilitator**, making students actors of their learnings
- ▶ **Integrate those issues into their research program**

53% of professors declare **needing more time** to integrate ecological issues into the curriculum.
 43% declare **needing training**.
 42% declare **needing more discussions with their peers**.

THIS REPORT OFFERS :

Recommendations per actor

THE STATE

Set up a suitable framework



- ▶ Inject momentum by defining a national higher education and research strategy for climate with the objective of training 100% of students on ecological issues
- ▶ Create a **framework** to incentivise the transition, for example, by valuing interdisciplinarity work and teaching in the career of professors
- ▶ Offer a financial support to universities – especially public ones – to aid them in their transition

STUDENTS & ALUMNI

Engage & testify



- ▶ Learn about ecological issues
- ▶ Mobilise and raise awareness among peers and students and alumni associations, for example, by organising events
- ▶ Alert, and relay expectations to lecturers and institution administration, for example by talking with them or writing open letters
- ▶ **Testify and manifest** the need for skills in the professional world (for alumni)

ACCREDITATIONS AND RANKINGS

Encourage & value



- ▶ Grant **ecological issues a higher weight** than any other criterion
- ▶ Precisely define how ecological issues will be evaluated, by placing planetary boundaries at the centre
- ▶ Value the incorporation of ecological issues in all courses
- ▶ Evaluate, both quantitatively and qualitatively, the impact of actions undertaken
- ▶ Ensure transparency in the procedure, methodology, data, and cross references

COMPANIES

Support & testify



- ▶ Become actors in the ecological transition by integrating those issues into their strategy, operations, and recruitment
- ▶ Organise **continuous training** of all staff on ecological issues to be able to lead their transition
- ▶ **Recruit** competent staff with regard to ecological issues
- ▶ Finance research on ecological issues

Average unit price	Quantity	Sales	sales vs Target	Internet sales	Segment	Time to delivery (days)	Energy consumption unit (kWh)
50 €	100 000	5 000 000 €	●	223 000 €	Government	38	2,38
18 €	75 000	1 350 000 €	🕒	167 250 €	Small Business	25	0,86
13 €	80 000	1 040 000 €	🕒	178 400 €	Midmarket	40	0,62
24 €	60 000	1 440 000 €	○	133 800 €	Small Business	45	1,14
24 €	120 000	2 880 000 €	○	26			1,14
12 €	110 000	1 320 000 €	🕒	24			0,57
12 €	90 000	1 080 000 €	🕒	20			0,57
24 €	70 000	1 680 000 €	🕒	15			1,14
12 €	100 000	1 200 000 €	○	22			0,57
9 €	80 000	720 000 €	🕒	17			0,43
12 €	130 000	1 560 000 €	🕒	28			0,57
12 €	75 000	900 000 €	○	16			0,57
12 €	70 000	840 000 €	🕒	15			0,57
18 €	100 000	1 800 000 €	🕒	22			0,86
24 €	75 000	1 800 000 €	🕒	16			1,14
26 €	80 000	2 080 000 €	🕒	17			1,24
8 €	60 000	480 000 €	🕒	13			0,38
12 €	120 000	1 440 000 €	🕒	26			0,57
12 €	110 000	1 320 000 €	○	24			0,57
9 €	90 000	810 000 €	🕒	20			0,43
2 €	70 000	140 000 €	🕒	15			0,10
37 €	100 000	3 700 000 €	🕒	22			1,76
12 €	80 000	960 000 €	🕒	17			0,57
18 €	130 000	2 340 000 €	🕒	28			0,86
4 €	70 000	280 000 €	○				0,38
12 €	100 000	1 200 000 €	○	167 250 €	Midmarket	35	0,19
12 €	75 000	900 000 €	○	156 100 €	Government	40	0,67
12 €	80 000	960 000 €	○	223 000 €	Government	38	0,67

The Shift Project is a think tank working towards a post-carbon economy. As a non-profit organization recognized as being in the public interest and guided by the demands of scientific rigor, our mission is to enlighten and influence the debate on the energy transition in Europe. Our members are large companies that want to make the energy transition their priority. www.theshiftproject.org

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