RÉPUBLIQUE FRANÇAISE
Liberté
Égalité
Fraternité

FRANCE 2030
PROGRAMME DE RECHERCHE
CARBONE ET ÉCOSYSTÈMES CONTINENTAUX

FairCarboN

# Strategy to minimize FairCarboN carbon footprint


Nicolas Gratiot

Dir adjoint Institut des Géosciences de l'Environnement
Chargé de mission « transition » pour l'IRD
Cofondateur Ma Terre

Pierre Barré, Antonio Bispo, Tiphaine Chevalier, Patricia Garnier, Frida Keuper, Anita Van Quynh
Perrine Franquet, Claire Heitz



Thanks to Labos1point5, Ma Terre teams

Les journées annuelles du PEPR exploratoire FairCarboN 25-27 nov 2024

Since the first Earth Day 50 years ago, it has become clear that it is easier to generate scientific insight into the ways human systems are altering the planet than it is to redirect those human systems to lessen their planetary impact. At the heart of this conundrum are divergent human values.

Commentary

# One Earth, Many Futures, No Destination

Mike Hulme[1,*]
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https://doi.org/10.1016/j.oneear.2020.03.005

Since the first Earth Day 50 years ago, it has become clear that it is easier to generate scientific insight into the ways human systems are altering the planet than it is to redirect those human systems to lessen their planetary impact. At the heart of this conundrum are divergent human values.

# Various existing tools?

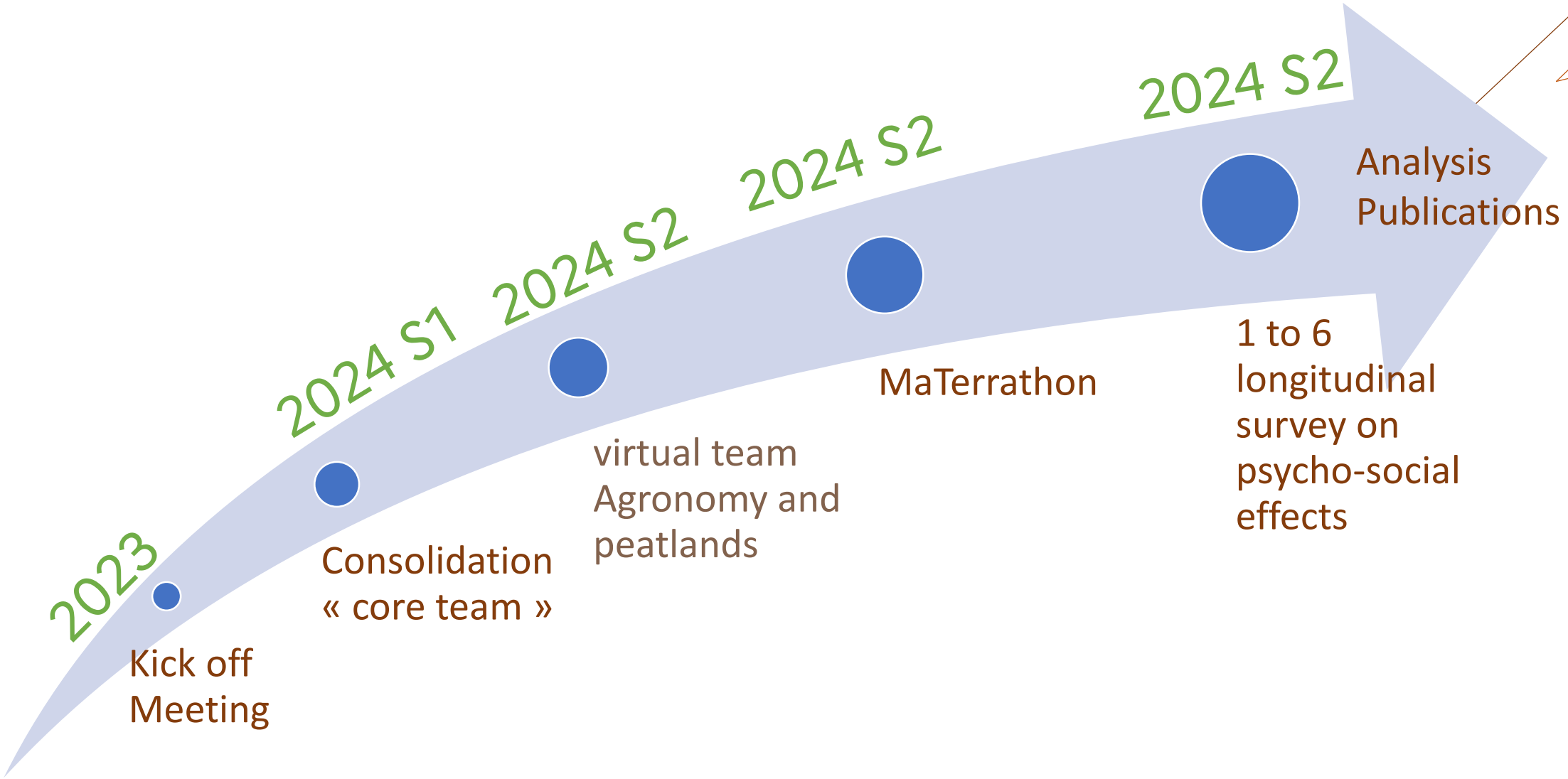
Labos 1 point 5

# Ma Terre workshop

- Questionning our practices
- Test scenarios of reduction
- Scale-up : leverage effects in institutions

(IRD dec 23, CNRS jan 24, INRAE mai 24)

# Time schedule



# Training of FairCarboN volunteer

2023

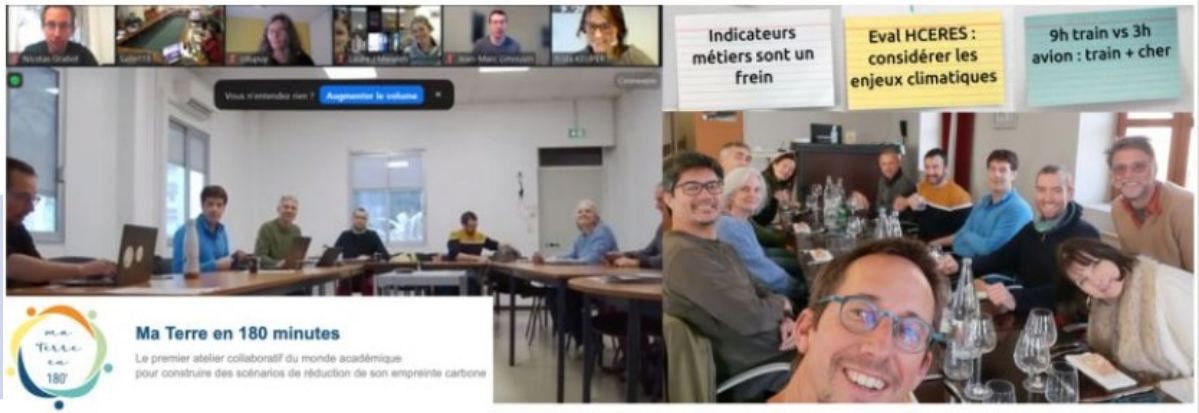
Kick off Meeting

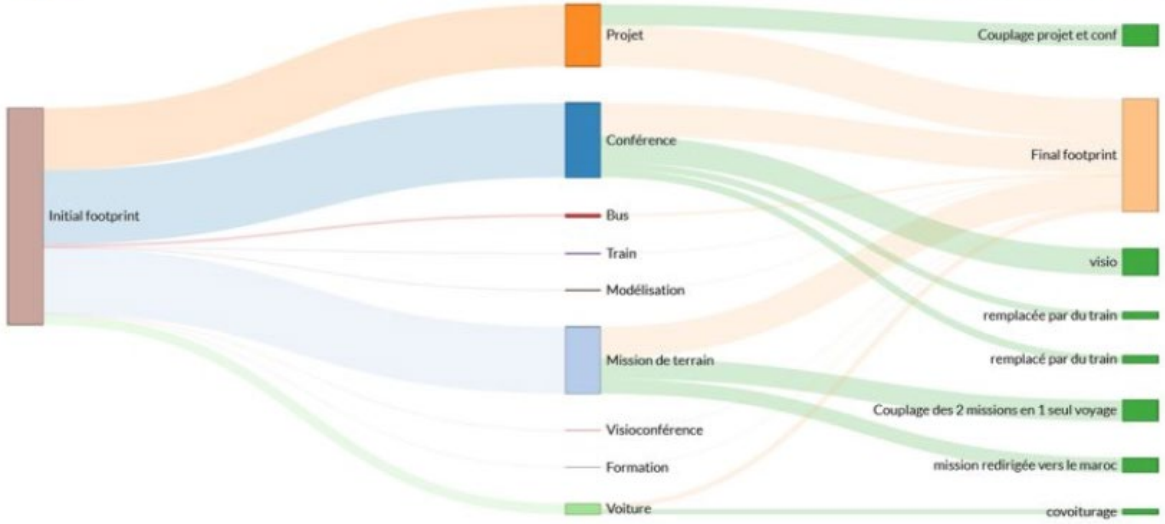
2024 S1

Consolidation « core team »

**Ma Terre en 180 Min**
356 abonnés
9 mois • Modifié •

Le PEPR FairCarboN, c'est une communauté d'~300 scientifiques (~40M€ pour 6 ans) qui s'intéressent au cycle du carbone et ses dimensions socio-écologiques.
👉 Hier, nous avons réuni une "task force" d'une vingtaine de personnes, ... plus



Presentation (5') | Awareness-raising (20') | Amazing (25') | Questionnaire (10') | Rolled (15') | Characters (10') | **Table (70')** | Review (20') | Debrief (30') | Attestation

Emission factors

**Displacement (annual cumulative use)**

**Travel (specific event usage)**

**Calculations and manips**

**Purchase / Consumables**

Add a legend

*ANR / ERC*

ANR | ERC

1.5° Charles
PhD student, Ecologist-Agronomist

Aurora
Teacher-researcher, agronomist, senior

Alfred
Researcher, Biogeochemist, senior

Lucie
Post-doc, biogeochemist, junior

Camille
AI Administration, Junior

Severin
Research engineer, specialist in flow towers, senior

Launching the FREE negotiation

1st alternative

2nd alternative

3rd alternative

4th alternative

5th alternative

6th alternative

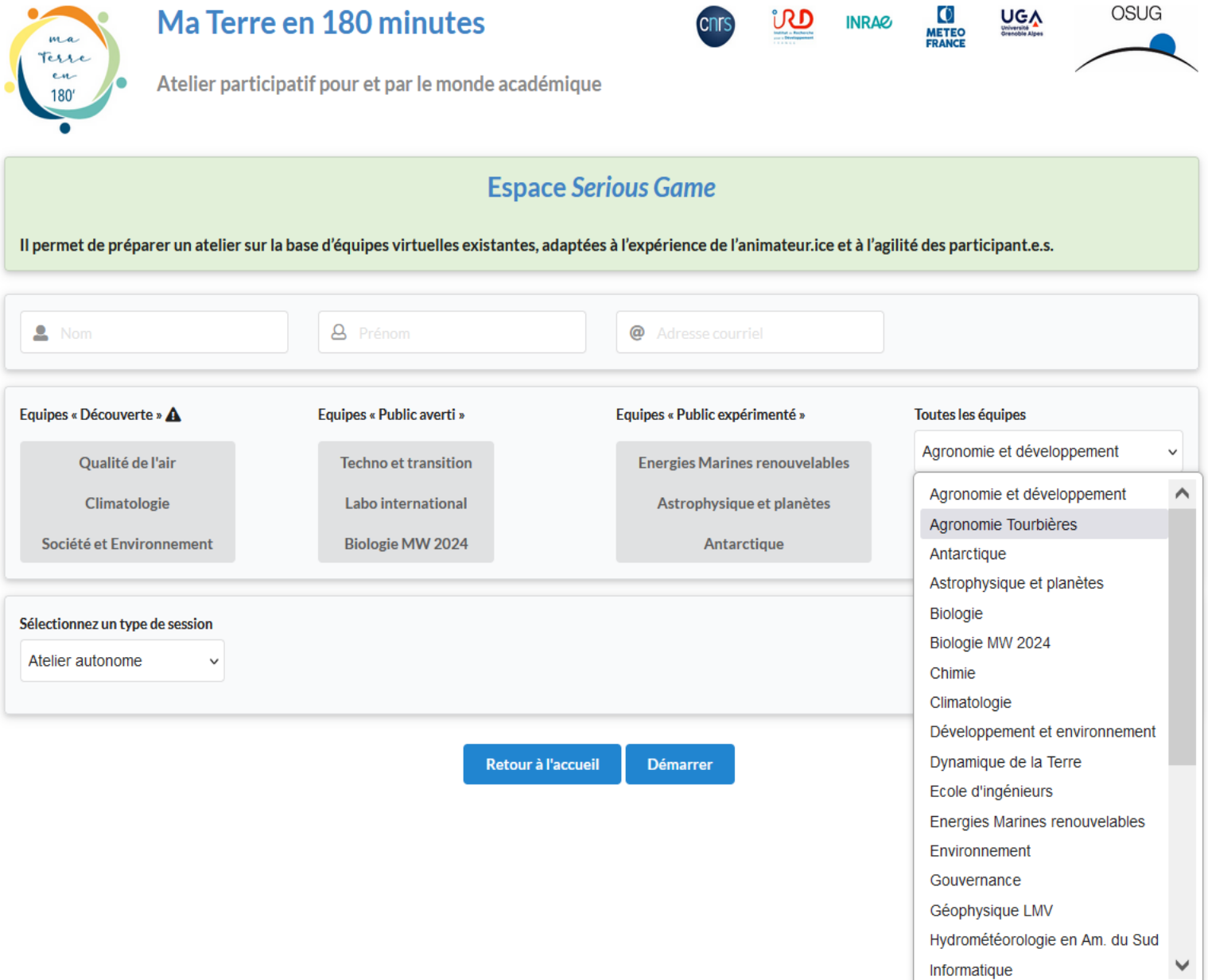
Add an alternative

Modify the workshop...

# Agronomy and peatlands workshop

*45 529 kg CO2eq*

# New open access virtual team



# MaTerrathon

# MaTerrathon

## Ma Terre en 180 minutes

Atelier participatif pour et par le monde académique

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BISPO Antonio | antonio.bispo@inrae.fr | Agronomie Tourbières | ESR - Laboratoires | Atelier autonome | AGR 01 | FR | 6 | 2024-11-26 21:02 | 2024-11-26 21:34 | Terminé | 2024-11-26-b078dce4-6d40 | 2024-11-26-b078dce4 | 21482 kg CO2eq (-52.8%) | |
| KEUPER Frida | frida.keuper@inrae.fr | Agronomie Tourbières | ESR - Laboratoires | Atelier autonome | AGR 01 | FR | 6 | 2024-11-26 20:59 | 2024-11-26 21:34 | Négociation guidée en cours | 2024-11-26-62b85fc7-6c57 | 2024-11-26-62b85fc7 | 21260 kg CO2eq (-53.3%) | |
| Barré Pierre | | Agronomie Tourbières | ESR - Laboratoires | Atelier autonome | AGR 01 | FR | 6 | 2024-11-26 20:56 | 2024-11-26 21:37 | Terminé | 2024-11-26-134d2d16-5e68 | 2024-11-26-134d2d16 | 21370 kg CO2eq (-53.1%) | |
| garnier patricia | patricia.garnier@inrae.fr | Agronomie Tourbières | ESR - Laboratoires | Atelier autonome | AGR 01 | FR | 6 | 2024-11-26 21:12 | 2024-11-26 21:32 | Terminé | 2024-11-26-c1928217-7b6a | 2024-11-26-c1928217 | 22672 kg CO2eq (-50.2%) | |
| Chevallier Tiphaine | tiphaine.chevallier@ird.fr | Agronomie Tourbières | ESR - Laboratoires | Atelier autonome | AGR 01 | FR | 6 | 2024-11-26 21:02 | 2024-11-26 21:32 | Terminé | 2024-11-26-a916c8fb-531f | 2024-11-26-a916c8fb | 22539 kg CO2eq (-50.5%) | |
| Chevillard Sylvain | sylvain.chevillard@inria.fr | Astrophysique et planètes | ESR - Laboratoires | Test | AST 01 | FR | 6 | 2024-11-26 16:24 | 2024-11-26 16:36 | Test - Sans réduction | 2024-11-26-35bf211d-5505 | 2024-11-26-35bf211d | 90442 kg CO2eq (-8.1%) | |
| Demoinet Emilie | emilie.demoinet@univ-cotedazur.fr | Astrophysique et planètes | ESR - Laboratoires | Test | AST 01 | FR | 6 | 2024-11-26 22:26 | 2024-11-26 22:41 | Test - Négociation guidée en cours | 2024-11-26-e1c8e138-a163 | 2024-11-26-e1c8e138 | 68613 kg CO2eq (-28.7%) | |
| Chevillard Sylvain | sylvain.chevillard@inria.fr | Astrophysique et planètes | ESR - Laboratoires | Test | AST 01 | FR | 6 | 2024-11-26 23:00 | 2024-11-26 23:00 | Test - Négociation guidée en cours | 2024-11-26-4474b735-f9f4 | 2024-11-26-4474b735 | 61276 kg CO2eq (-37.8%) | |
| Demoinet Emilie | emilie.demoinet@univ-cotedazur.fr | Biologie MW 2024 | ESR - Laboratoires | Test | BIO 01 | FR | 6 | 2024-11-26 16:22 | 2024-11-26 17:23 | Test - Sans réduction | 2024-11-26-3a1da5ea-34e2 | 2024-11-26-3a1da5ea | 45862 kg CO2eq (0.0%) | |

2024-11-25 (3)

# MaTerrathon

## Ma Terre en 180 minutes

Atelier participatif pour et par le monde académique

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# Acceptability?

VIDEO. COP21 : "L'accord d...

# MaTerrathon

## Ma Terre en 180 minutes

Atelier participatif pour et par le monde académique

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# Acceptability?
# Fit for 55 EU target

VIDEO. COP21 : "L'accord d...

Présentation (5') | Sensibilisation (20') | Etonnement (25') | Questionnaire (10') | Déroulé (15') | Personnages (10') | **Table (70')** | Bilan (20') | Debrief (30') | Attestation

Facteurs d'émission

**Déplacement (usage cumulé annuel)**

**Déplacement (usage événement spécifique)**

**Calculs et manips**

**Achats / Consommables**

Ajouter une légende

*ANR / ERC*

ANR | ERC

1.5° Charles
Doctorant, Ecologue-Agronome

Aurore
Enseignante-chercheuse, agronome, sénior

Alfred
Chercheur, Biogéochimiste, sénior

Lucie
Post-doc, biogéochimiste, junior

Camille
AI Administration, junior

Séverine
Ingénieur de Recherche, spécialiste des tours de flux, sénior

Atelier terminé

I will do this one online

EGU en train

EGU by train

Altruistic cancelling

She will do it online

Will go next year

Severine goes by bike

No need

online

Will think twice before printi

Combined with project trip

## Agronomie Tourbières - Atelier autonome - 26 novembre 2024

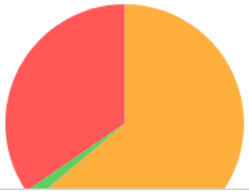
*45 530 (INITIAL) -10 211 (LIBRE) - 14 059 (GUIDEE) = 21 260 kg CO2eq (-53.3%)*

ANR - 5 000 kg CO2eq
- Projet 3 000 kg
- Modélisation 200000 hcpu 1 000 kg
- Conférence 500 kg
- Mission de terrain 500 kg

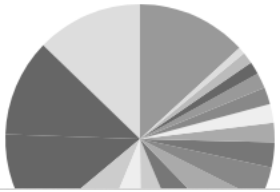
| | | | | | | |
|---|---|---|---|---|---|---|
| Déplacement (usage événement spécifique) | 27 950 kg CO2eq (66.3%) | 7 348 kg CO2eq (37.9%)<br>Réduction de -73.7% | 10 440 kg CO2eq (51.0%<br>Réduction de -62.7% | 12 880 kg CO2eq (62.5%)<br>Réduction de -53.9% | 12 473 kg CO2eq (63.9%)<br>Réduction de -55.4% | 14 344 kg CO2eq (73.0%)<br>Réduction de -48.7% |
| Calculs et manips | 375 kg CO2eq (0.9%) | 255 kg CO2eq (1.3%)<br>Réduction de -32.0% | 375 kg CO2eq (1.8%)<br>Pas de réduction | 375 kg CO2eq (1.8%)<br>Pas de réduction | 300 kg CO2eq (1.5%)<br>Réduction de -20.0% | 1 175 kg CO2eq (6.0%)<br>Pas de réduction |
| Achats / Consommables | 13 831 kg CO2eq (32.8%) | 11 546 kg CO2eq (59.5%)<br>Réduction de -16.5% | 8 991 kg CO2eq (44.0%)<br>Réduction de -35.0% | 7 339 kg CO2eq (35.6%)<br>Réduction de -46.9% | 6 753 kg CO2eq (34.6%)<br>Réduction de -51.2% | 4 132 kg CO2eq (21.0%)<br>Réduction de -70.1% |

Empreinte carbone avant réduction
42 156 kg CO2eq

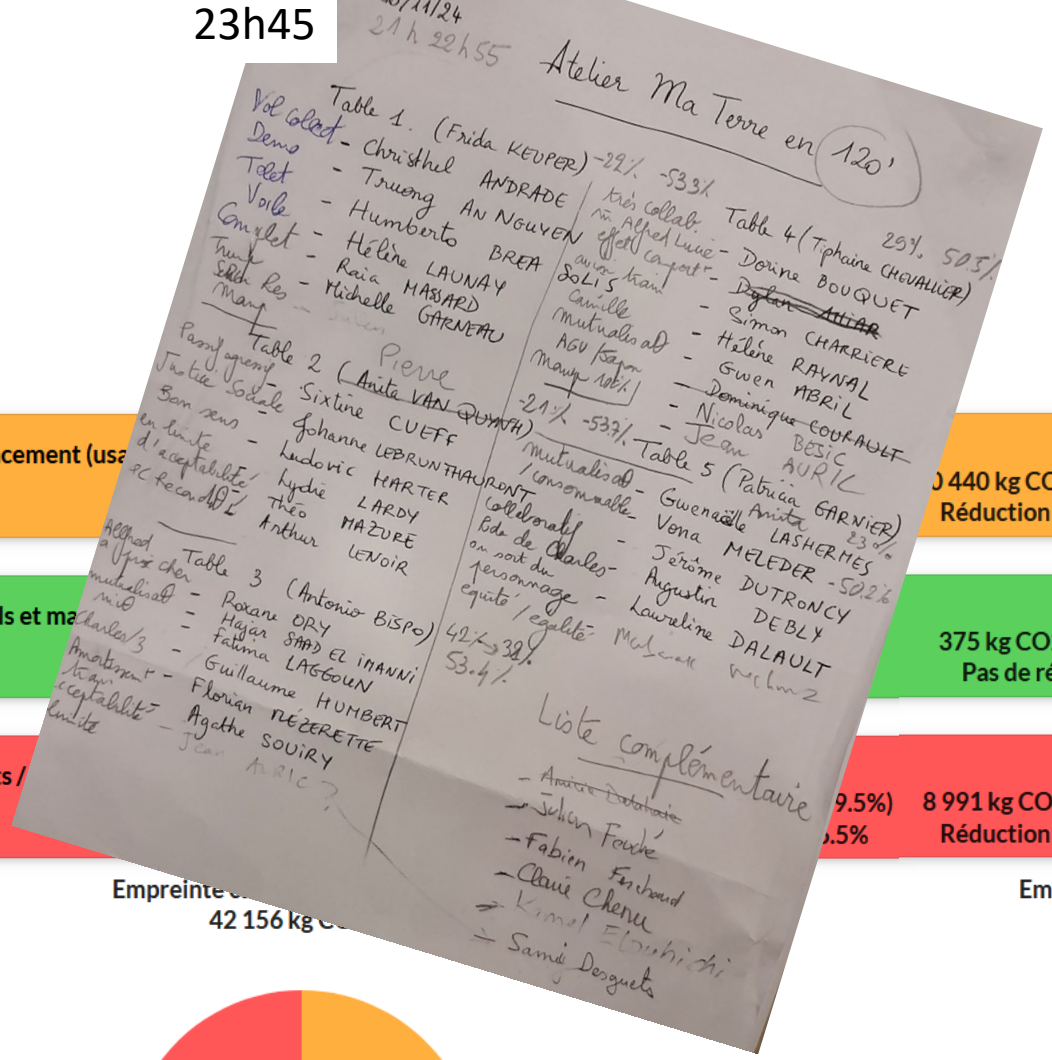
Empreinte carbone après réduction
19 530 kg CO2eq
Réduction de -53.7%



Réductions de l'empreinte carbone
24 900 kg CO2eq



23h45

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| | | | | |
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| Calculs et ma | 375 kg CO2eq (1.8%) Pas de réduction | 375 kg CO2eq (1.8%) Pas de réduction | 300 kg CO2eq (1.5%) Réduction de -20.0% | 1 175 kg CO2eq (6.0%) Pas de réduction |
| Achats / | 9.5%) 5.5% | 8 991 kg CO2eq (44.0%) Réduction de -35.0% | 7 339 kg CO2eq (35.6%) Réduction de -46.9% | 6 753 kg CO2eq (34.6%) Réduction de -51.2% | 4 132 kg CO2eq (21.0%) Réduction de -70.1% |

Empreinte c
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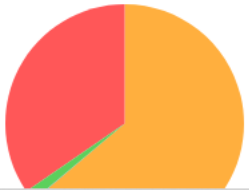

Réductions de l'empreinte carbone
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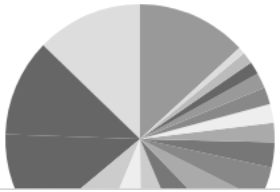

# Next steps

- Analyse low carbon pathways and promote them
- More sessions (new projects?)

- Start the psycho-social longitudinal study (ready for launch)

**Claudia Teran-Escobar**

Maîtresse de conférences en Psychologie sociale de la santé et du développement durable

# Study on the levers and obstacles to reducing the carbon footprint of academic players

**Why ? (Objectif de l'étude)**

- Identify the psychological and institutional obstacles and levers to reducing the carbon footprint of academic players.
- Explore perceptions and motivations around changes in practices (air travel, digital use, commuting).

**How ? (Collect data)**

- Online survey: duration 15-20 minutes : https://enquetes.univ-grenoble-alpes.fr/v4/s/73psii
- Possibility of follow-up (instructions at the end of the questionnaire)

**What ? (Survey content)**

- Academic practices (commuting, conference travel, use of digital technology) as well as institutional motivations and contexts

**Who is carrying out the study? (Coordination and contact)**

Claudia Teran-Escobar (Université Paris Nanterre) & Nicolas Gratiot (Institut de Géosciences de l'Environnement).

If you have any questions or would like to receive the results : cteranes@parisnanterre.fr .

# Next steps

- Analyse low carbon pathways and promote them
- More sessions (new projects?)
- Start the psycho-social longitudinal study (ready for launch)
- Make your own avatar

# Next steps

- Analyse low carbon pathways and promote them
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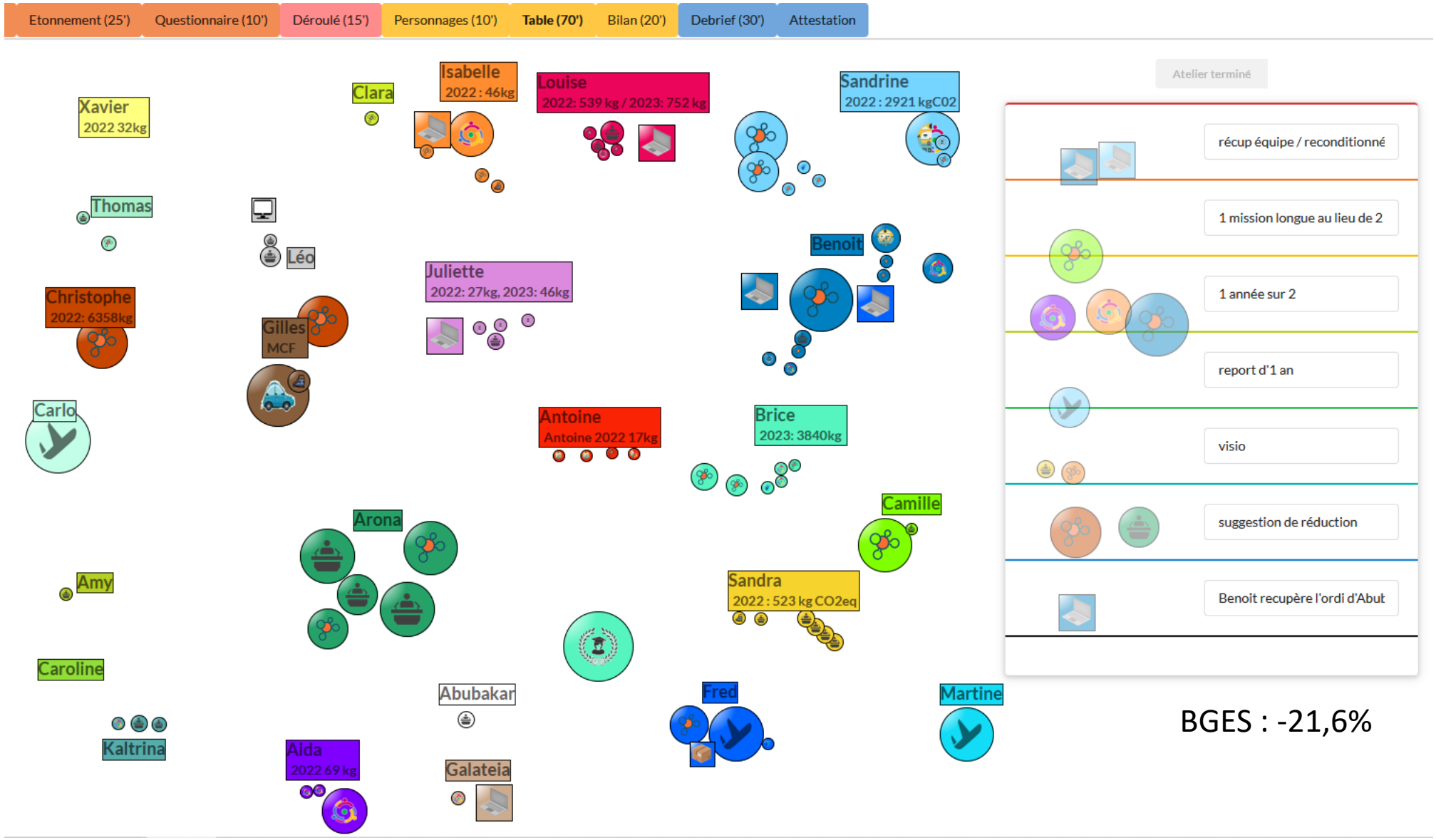
Etonnement (25')
Questionnaire (10')
Déroulé (15')
Personnages (10')
Table (70')
Bilan (20')
Debrief (30')
Attestation
Atelier terminé
Xavier
2022 32kg
Clara
Isabelle
2022 : 46kg
Louise
2022: 539 kg / 2023: 752 kg
Sandrine
2022 : 2921 kgC02
Thomas
Léo
Benoit
Juliette
2022: 27kg, 2023: 46kg
Christophe
2022: 6358kg
Gilles
MCF
Carlo
Antoine
Antoine 2022 17kg
Brice
2023: 3840kg
Camille
Arona
Amy
Sandra
2022 : 523 kg CO2eq
Caroline
Abubakar
Fred
Martine
Kaltrina
Aida
2022 69 kg
Galateia
récup équipe / reconditionné
1 mission longue au lieu de 2
1 année sur 2
report d'1 an
visio
suggestion de réduction
Benoit recupère l'ordi d'Abut

BGES : -21,6%

# Thanks, lets gFair

1.5°

## Some resources


Teran-Escobar, C., Becu, N., Champollion, N., Gratiot, N., Hingray, B., Panthou, G., & Ruin, I. (2024). A pilot randomised controlled trial comparing the effectiveness of the MaTerre180'participatory tool including a serious game versus an intervention including carbon footprint awareness-raising on behaviours among academia members in France. Plos one, 19(3), e0301124.

Gratiot N, Klein J, Challet M, Dangles O, Janicot S, Candelas M, et al. (2023) A transition support system to build decarbonization scenarios in the academic community. PLOS Sustain Transform 2(3): e00000492022-2

Malbet, F., Santerne, A., Milli, J., Champollion, N., Lamy, L., Imbaud, H., ... & Bellemain, P. (2024). " My Earth" Astrophysics and Planets--a serious game to build low carbon scenarios in the astronomy academic community. *arXiv preprint arXiv:2410.11357*.

Gratiot, N., Guillaud, D., Tremege, F., Champollion, N. 2024, Étudier la Terre sans la détruire davantage : comment faire de la recherche bas-carbone ? The conversation, 25 sept 2024.

# Thanks, lets gFair

1.5°

ma Terre en 180'

## Some resources


Teran-Escobar, C., Becu, N., Champollion, N., Gratiot, N., Hingray, B., Panthou, G., & Ruin, I. (2024). A pilot randomised controlled trial comparing the effectiveness of the MaTerre180'participatory tool including a serious game versus an intervention including carbon footprint awareness-raising on behaviours among academia members in France. Plos one, 19(3), e0301124.

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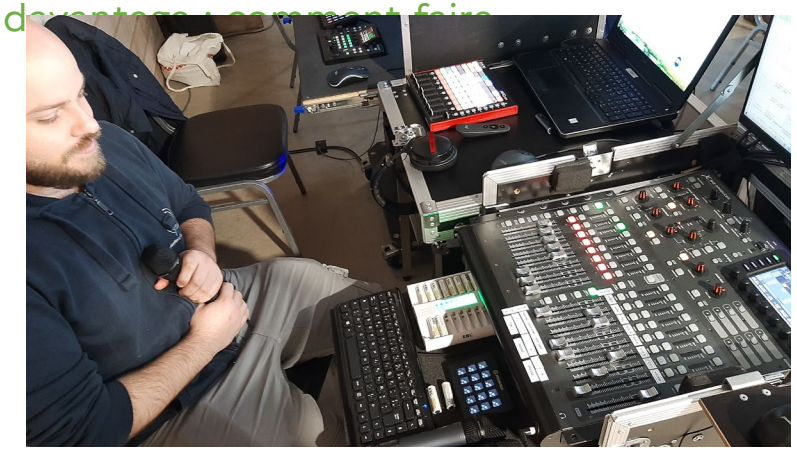
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