



**MINISTÈRE
DE L'ENSEIGNEMENT
SUPÉRIEUR
ET DE LA RECHERCHE**

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**FRANCE – MEXICO
ECOS NORD MEXIQUE
30 YEARS ANNIVERSARY**

Scientific impact of the program (2006-2022)

MESRI-DAEI / MEAE

2024

<http://www.enseignementsup-recherche.gouv.fr>

GENERAL PRESENTATION OF THE PROGRAM

Creation : 1994

The purpose of this program is to start or develop the scientific cooperation and the relations between the research centres and the universities of the two countries, through the support for research joint projects of excellence, implying the mobility of researchers by giving a priority to the formation on the levels doctoral and post-doctoral.

Total budget (France + Mexico) : around 380 000 € /year during 4 years

>> including budget from the French part : 190 000 € /year

>> including budget from the Mexican part : 190 000 € /year

Average budget per project (France + Mexico) : 10 000 € /year

Number of new projects per year : around 10

From 2006-2022:

607 applications submitted

178 projects funded

ECOS NORD MEXIQUE COMMITTEE

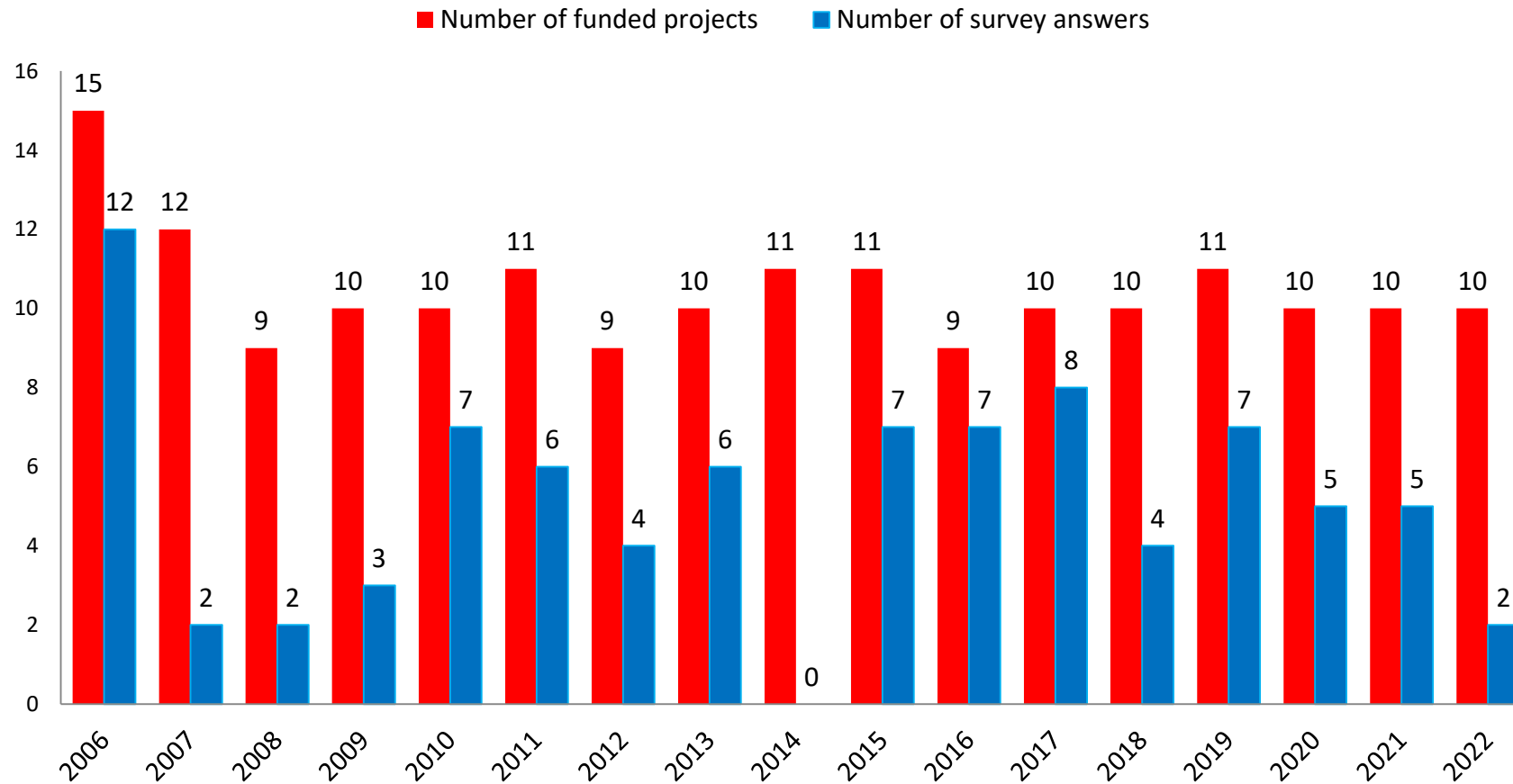
- Information about the program applications from 2006 to 2022
- List of mobilities (from France to Mexico and Mexico to France) from 2006 to 2022

Survey *(conducted by the French Ministry of Higher Education and Research and the French Ministry for Europe and Foreign Affairs)*

- Target : Principal Investigators of selected projects between 2006 and 2022
- Survey 1 duration : from **February to March 2018**
- Survey 2 duration : **January and February 2024**
- **49%** response ratio *(87 respondents for 178 funded projects)*

ANSWERS TO THE SURVEYS

Average response rate to the surveys : 49 % (87 answers)





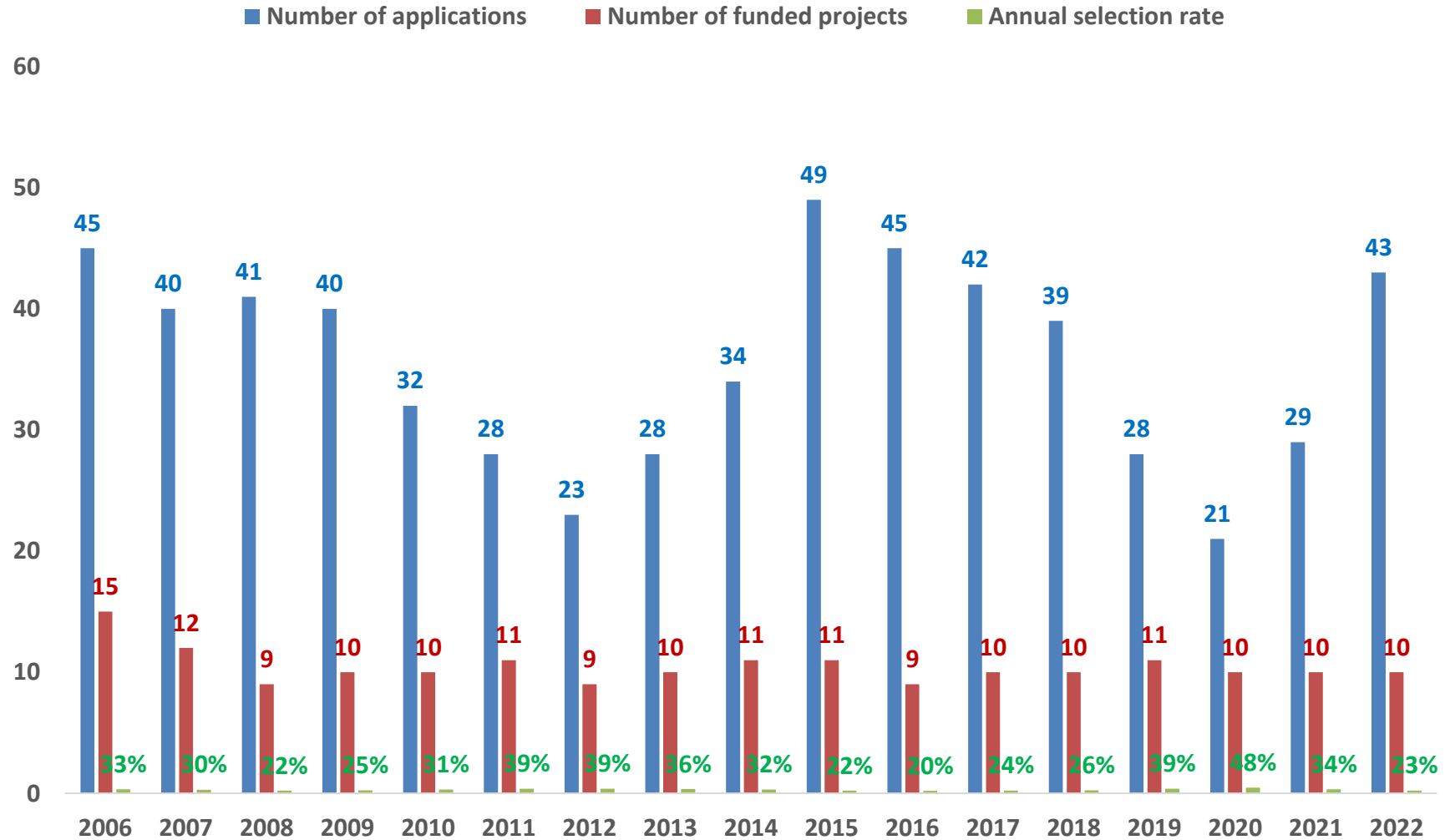
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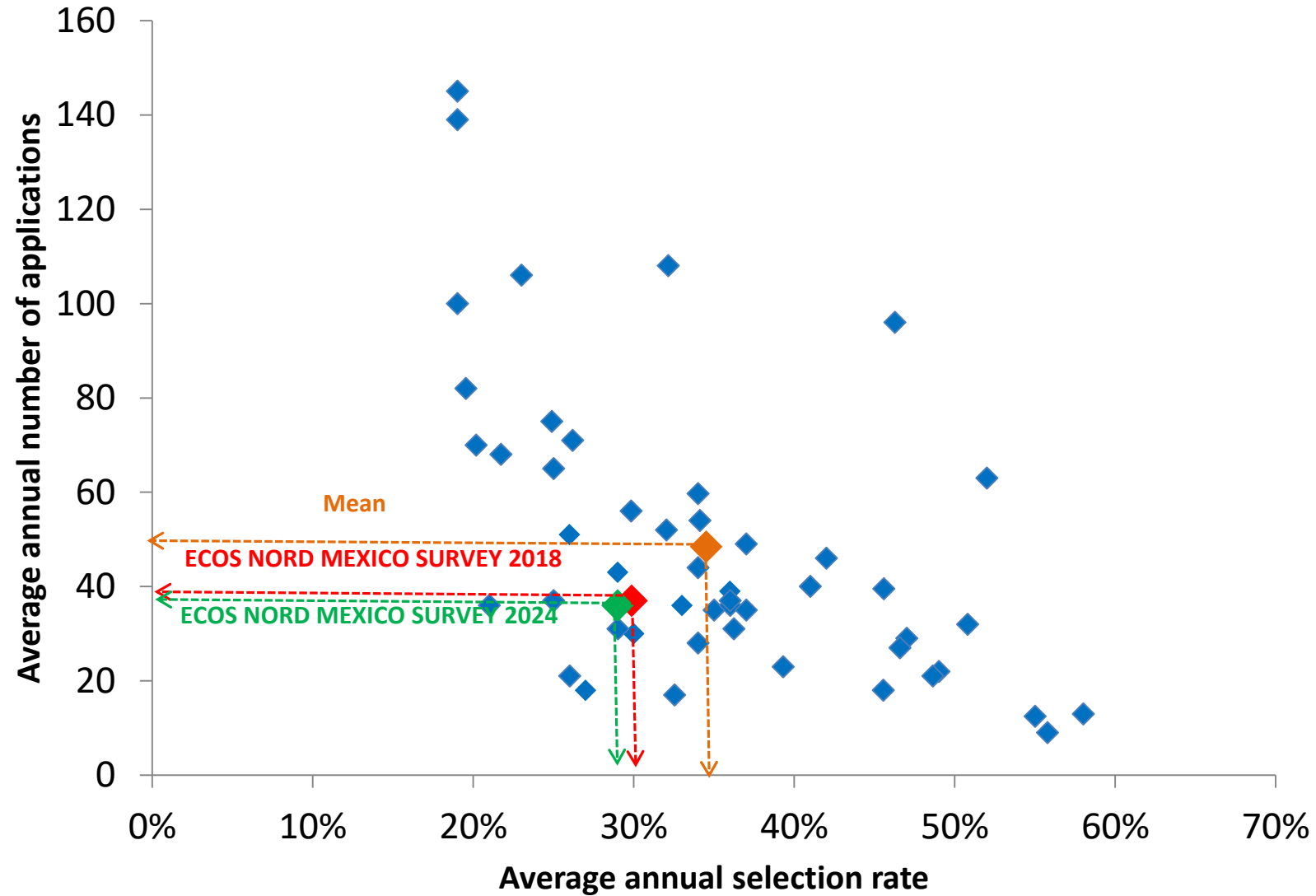
2006-2022 KEY POINTS

SUCCESS RATE

Average selection rate from 2006-2022: **29 %**



NUMBER OF APPLICATIONS VS SELECTION RATE

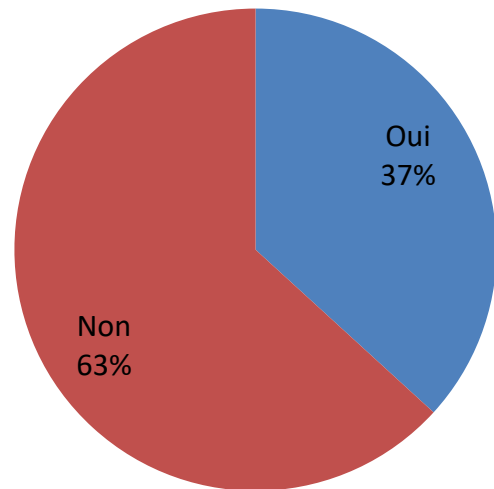


Survey 2018 : 26 programs

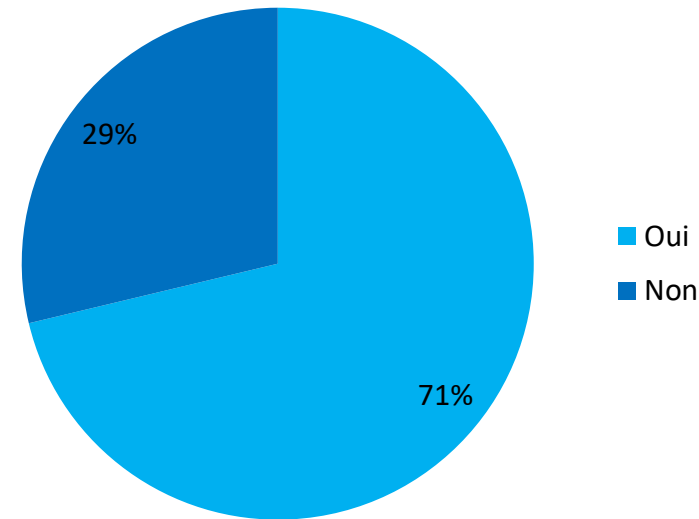
Survey 2024 : 50 programs

BEFORE THE ECOS NORD MEXICO PROJECT (1/2)

Previous participation to another funded cooperation program supported by France in Latin America



Previous cooperation with the same partner?



Data from 87 responses

BEFORE THE ECOS NORD MEXICO PROJECT (2/2)

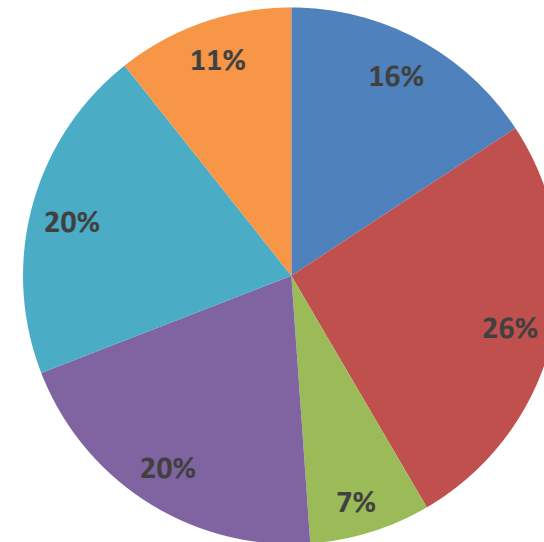
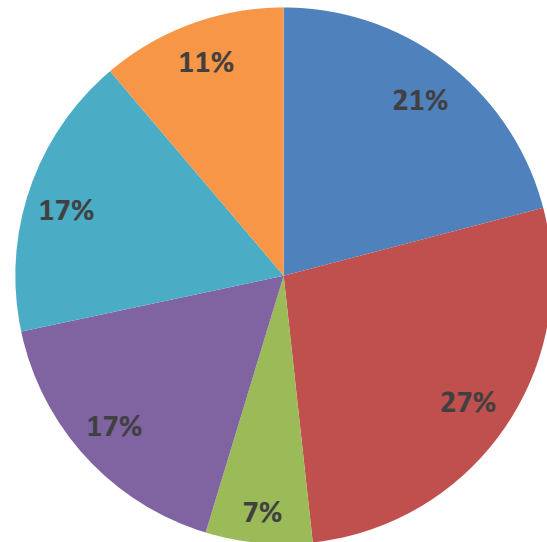
| With which scientific collaboration program ? | |
|---|-----|
| ECOS | 51% |
| COFECUB | 12% |
| PCP | 5% |
| PREFALC | 5% |
| STIC-AMSUD | 2% |
| FITEC | 2% |
| Other | 22% |

Data from 87 responses

SCIENTIFIC DOMAINS OF PROJECTS (2006-2022)

Number of applications : **607**

Number of funded projects : **178**



■ Mathematics / Information
 Technology / Engineering Sciences

■ Physics / Chemistry

■ Marine / Earth / Planet Sciences

■ Biology and Health

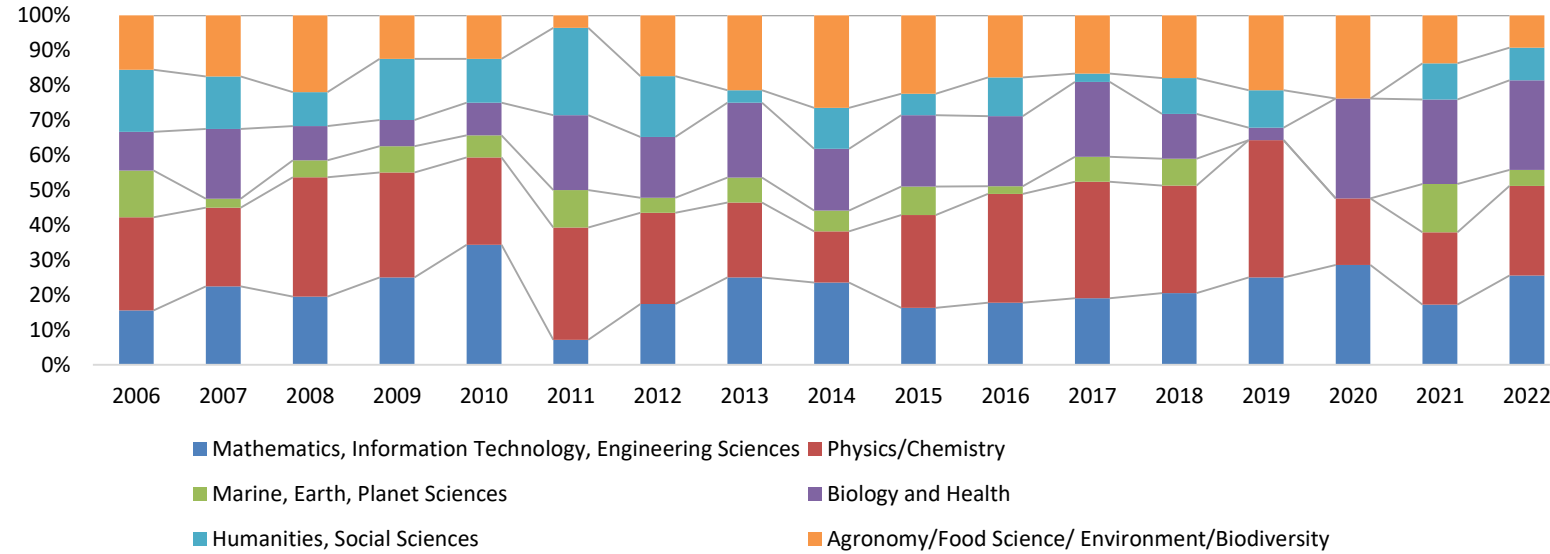
■ Agronomy / Food Science /
 Environment / Biodiversity

■ Humanities / Social Sciences

SCIENTIFIC DOMAINS : EVOLUTION 2006-2022

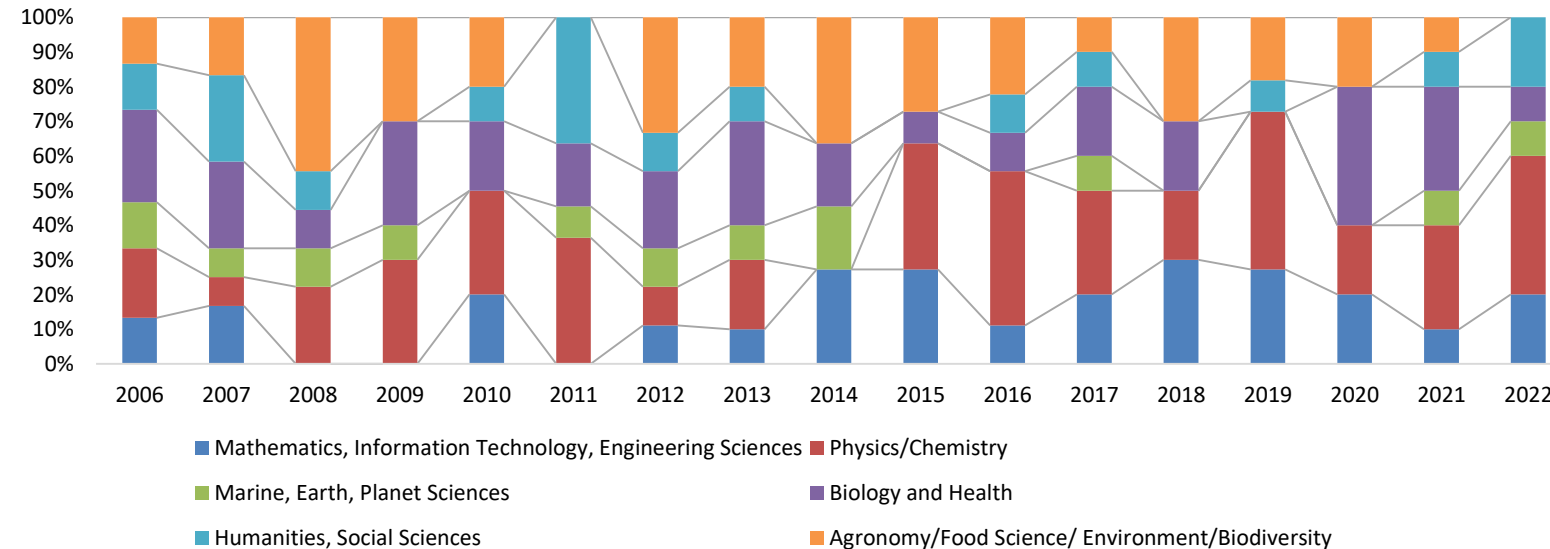
Percentage of applications filed by scientific domain each year compared to all applications filed in each scientific domain

Total number of applications : 607



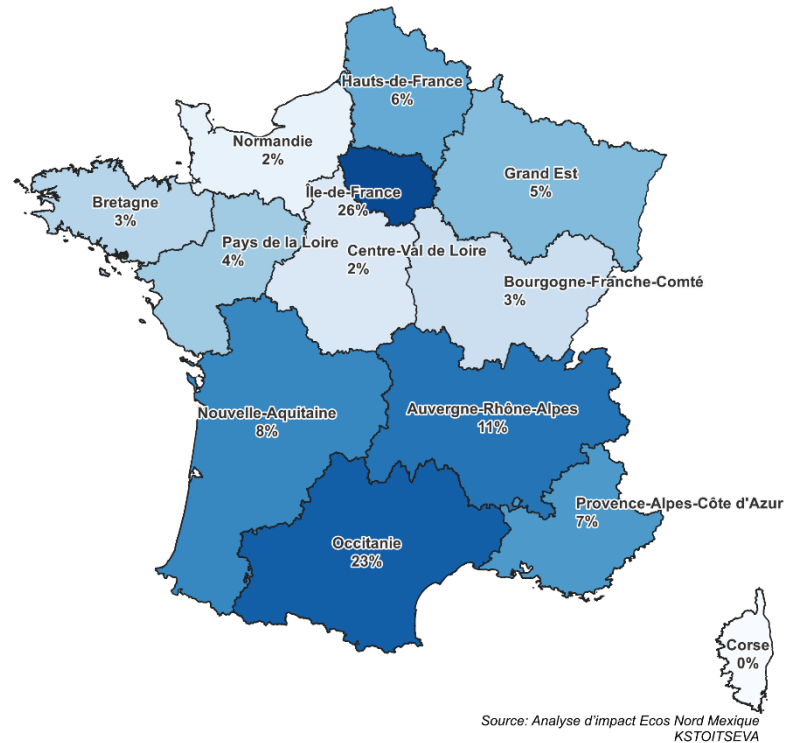
Percentage of selections filed by scientific domain each year compared to all selections filed in each scientific domain

Total number of selections : 178

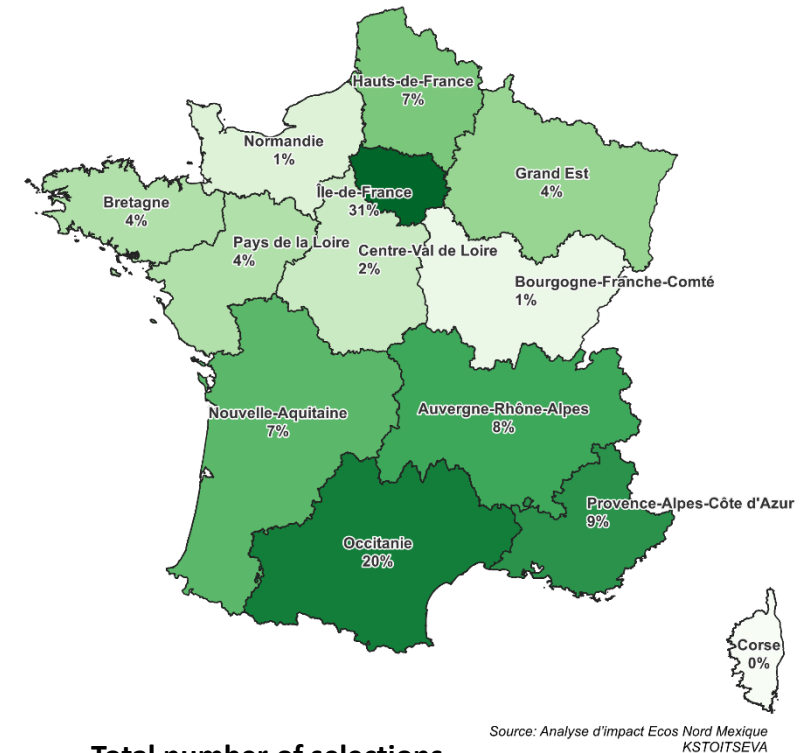


REGIONAL DISTRIBUTION OF SELECTED PROJECTS 2006-2022

Program ECOS NORD MEXICO Regional percentages of applications and selections 2006-2022



**Total number of applications
(all domains)
607**



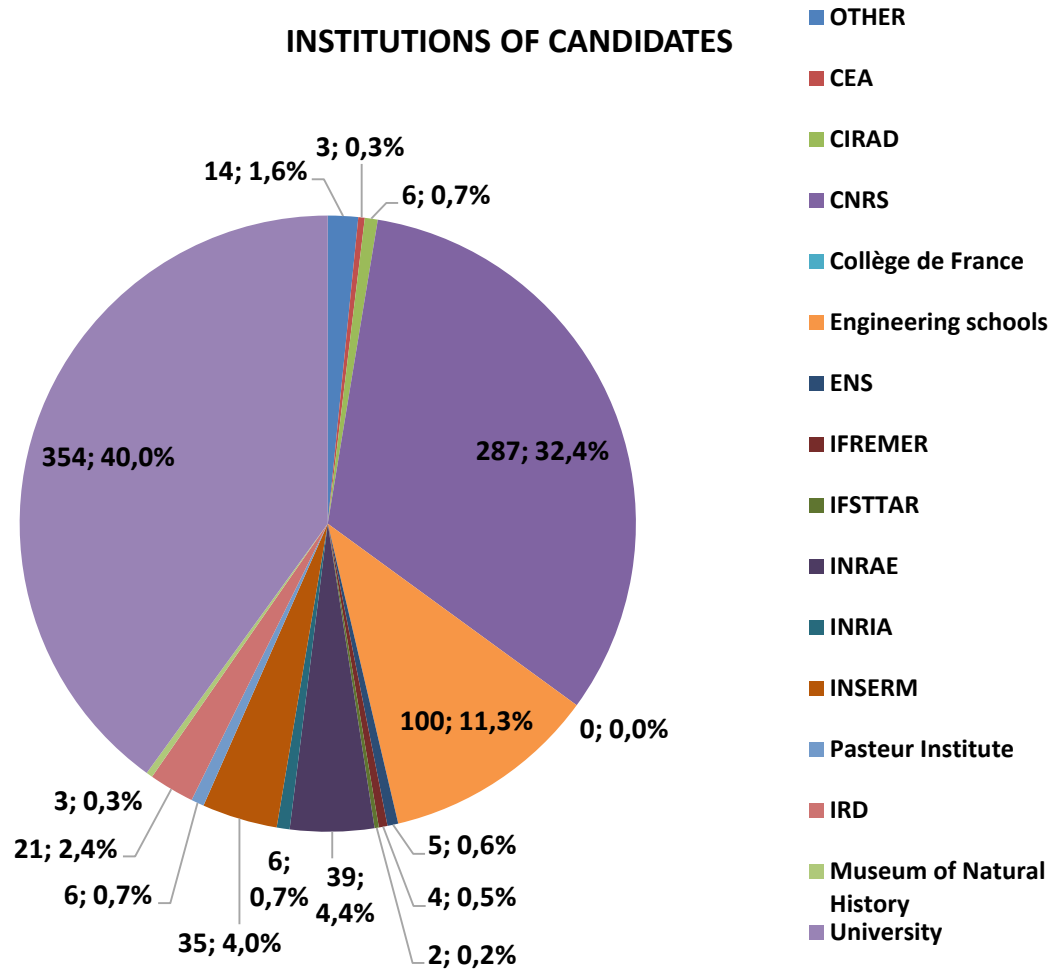
**Total number of selections
(all domains)
178**

The region Ile de France is the main contributor both for applications and selections followed by Occitanie

FRENCH PARTICIPATING INSTITUTIONS

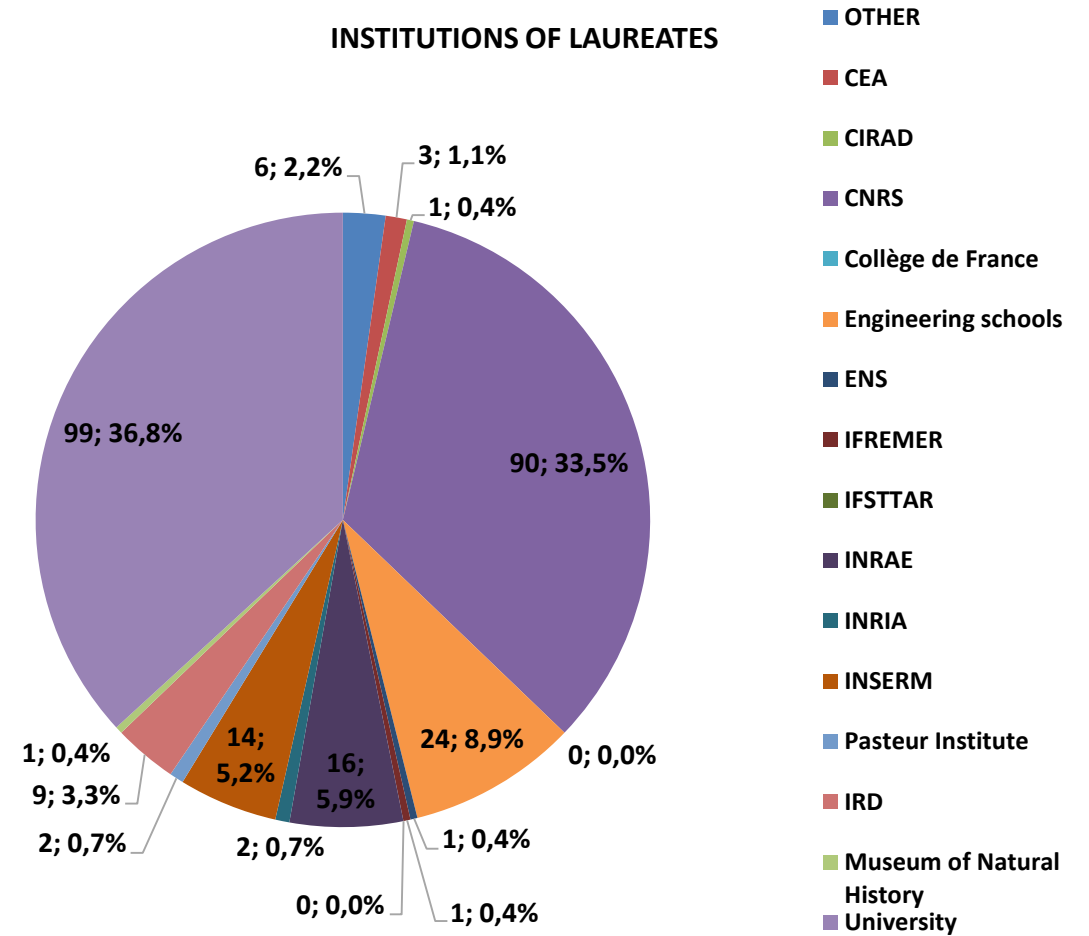
(DATA FROM THE COMMITTEE)

INSTITUTIONS OF CANDIDATES



Data from 565 submitted projects

INSTITUTIONS OF LAUREATES

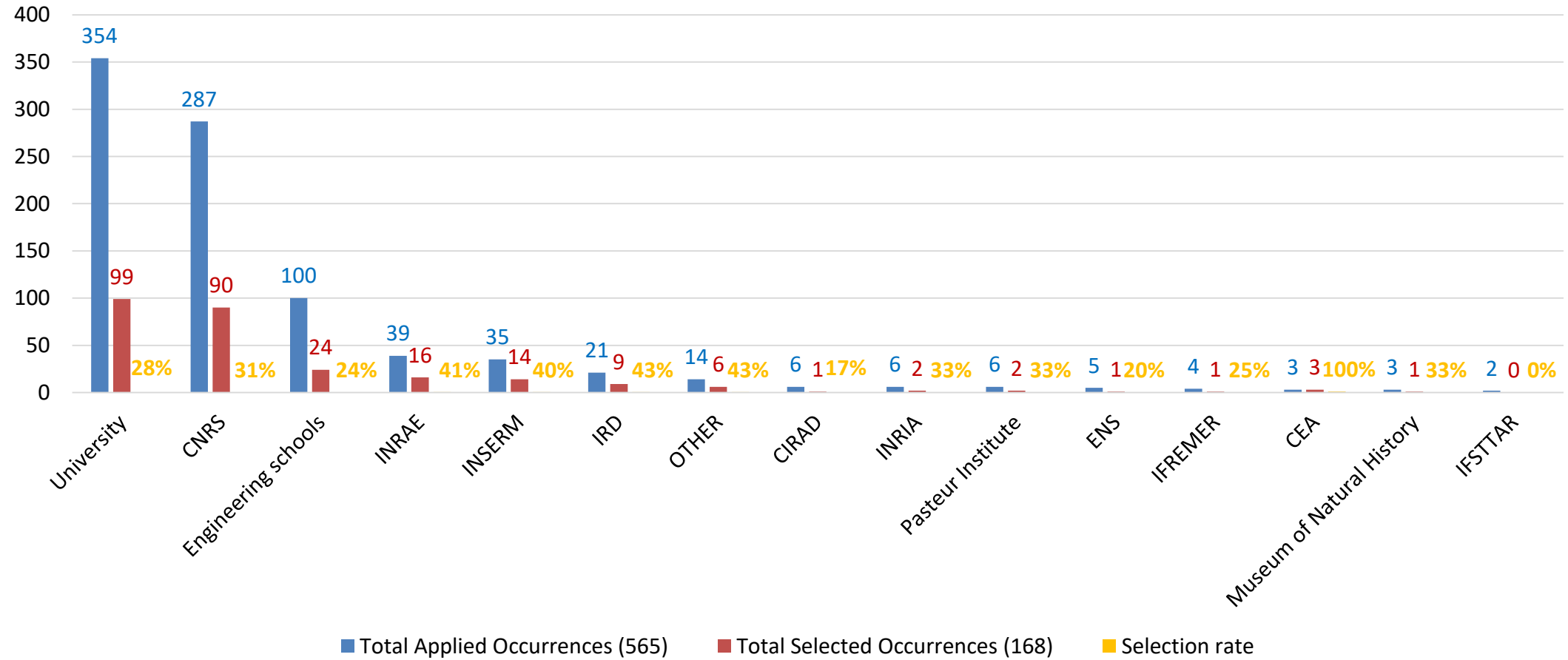


Data from 168 selected projects

FRENCH PARTICIPATING INSTITUTIONS

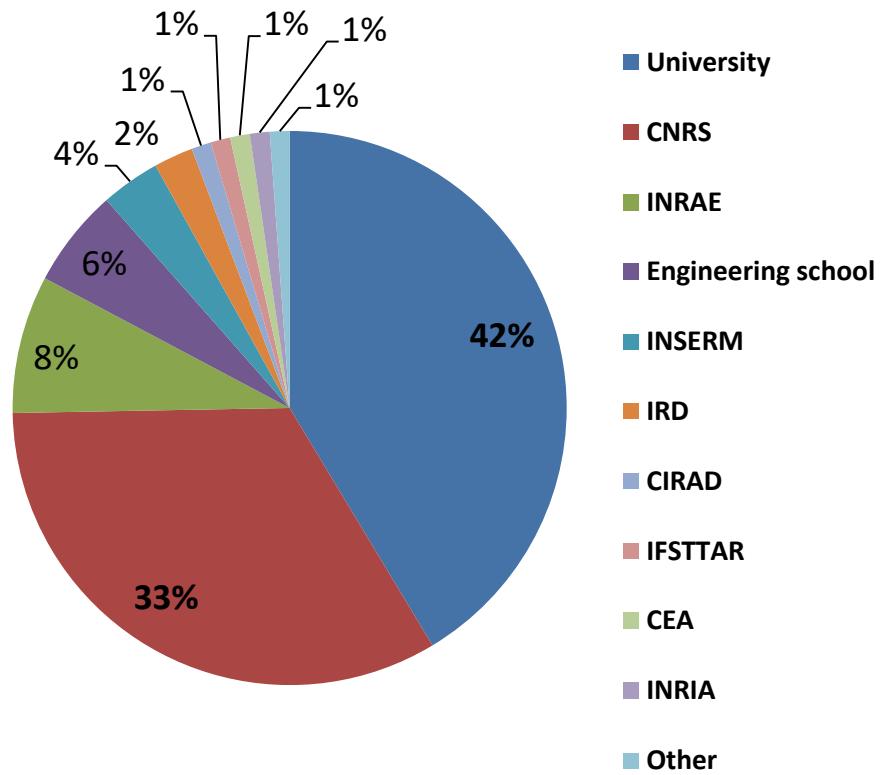
(DATA FROM THE COMMITTEE)

Number of occurrences for each institution

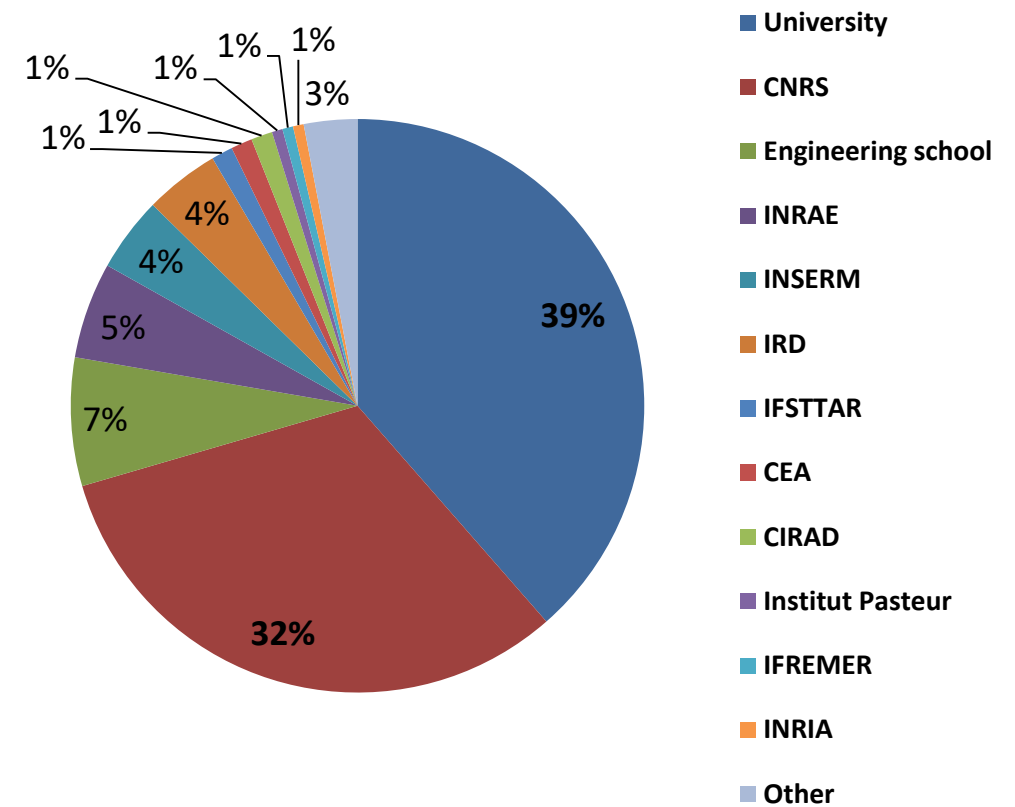


FRENCH PARTICIPATING INSTITUTIONS (DATA FROM THE SURVEY)

PI's employers

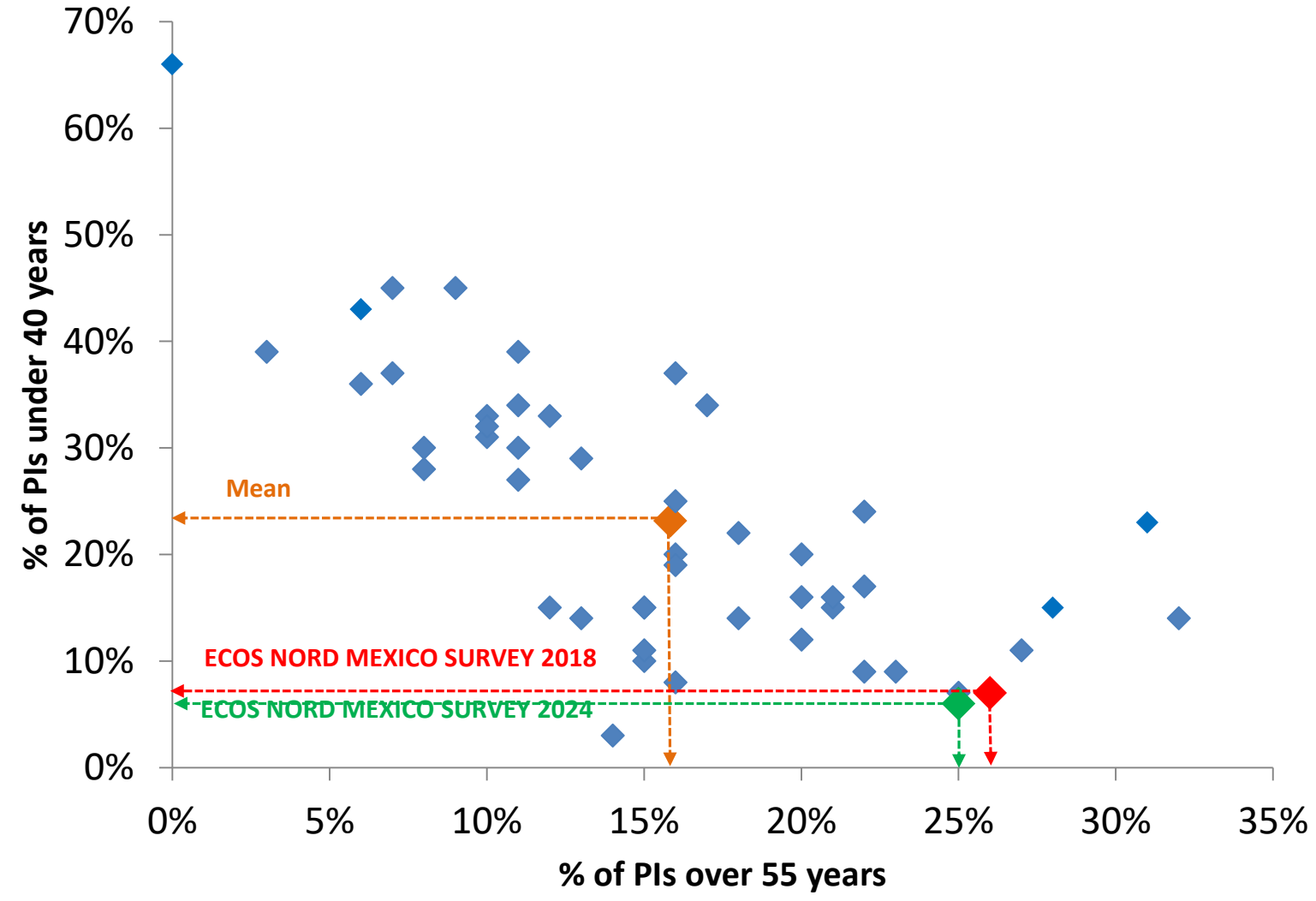


Laboratories authorities



Data from 87 answers

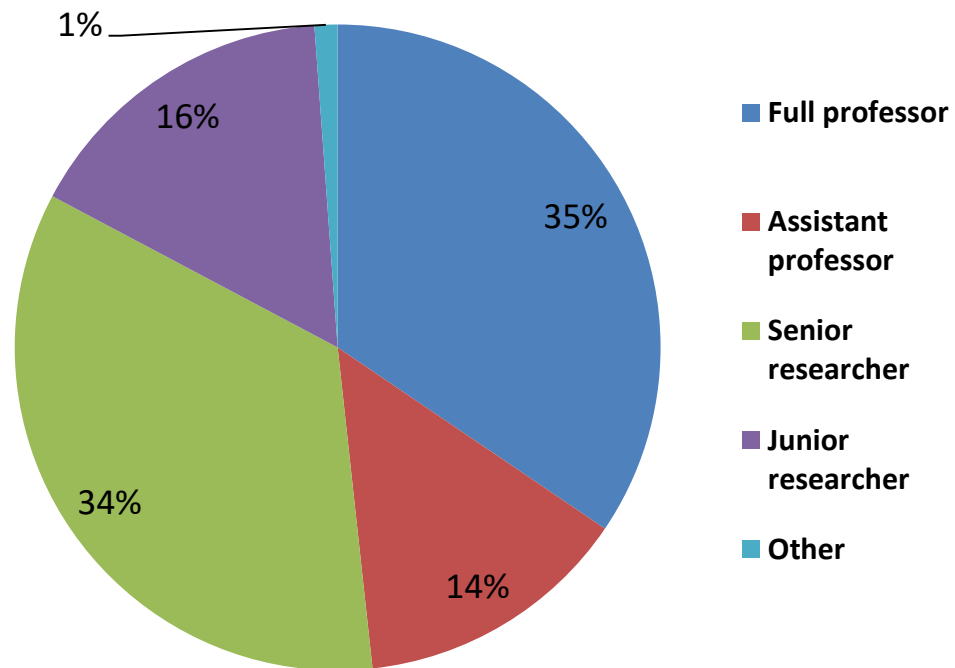
AGE OF PRINCIPAL INVESTIGATORS (PI) 2006-2022



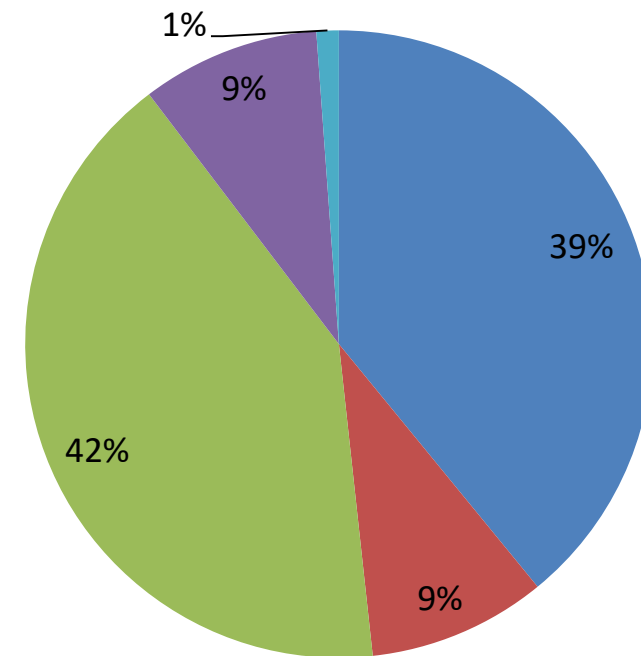
Survey 2018 : 26 programs
Survey 2024 : 50 programs

FRENCH PIS (PRINCIPAL INVESTIGATORS) : STATUS 2006-2022

Previous professional status (at the beginning of the project)

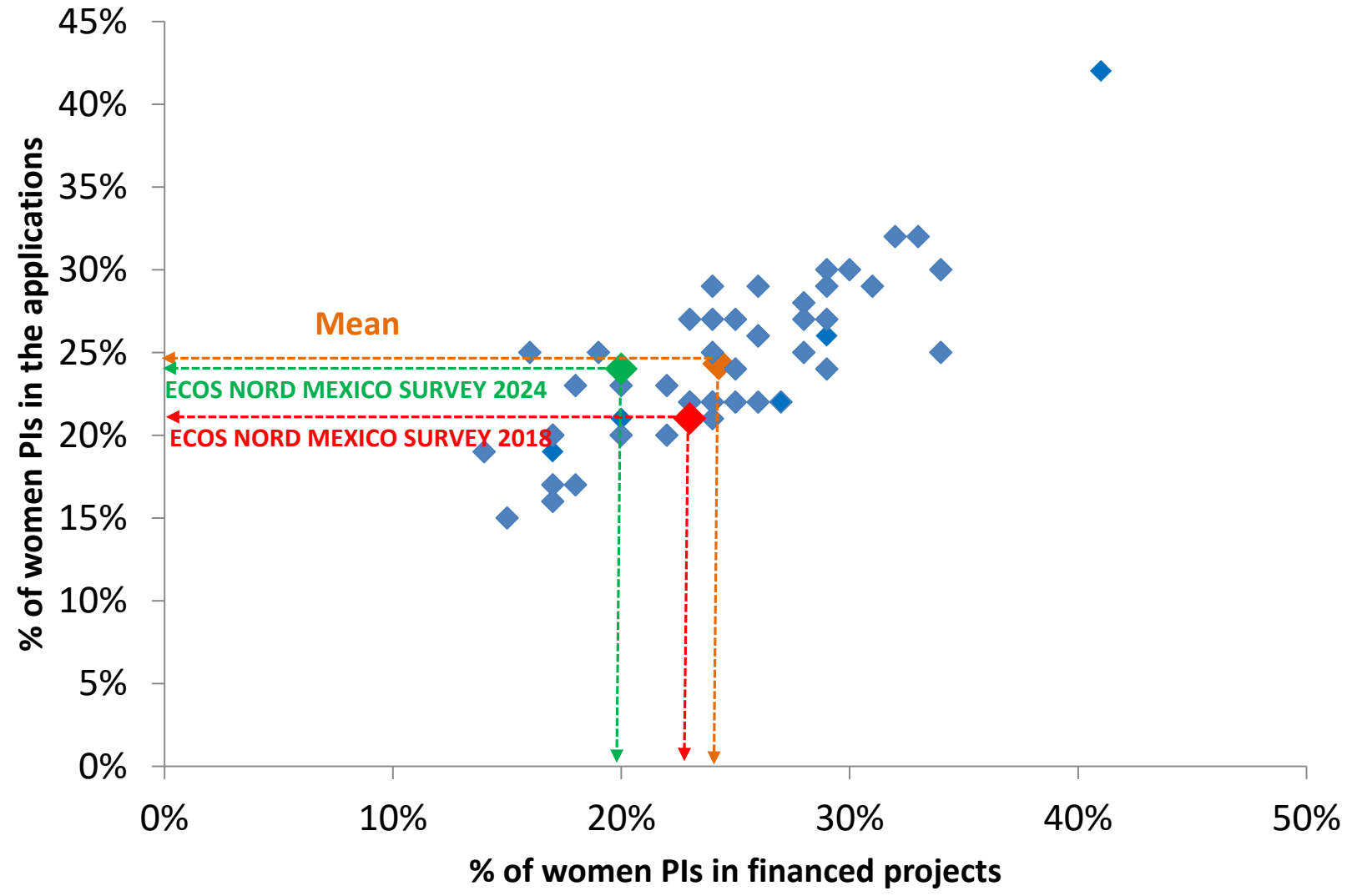


Current professional status



Data from 87 responses

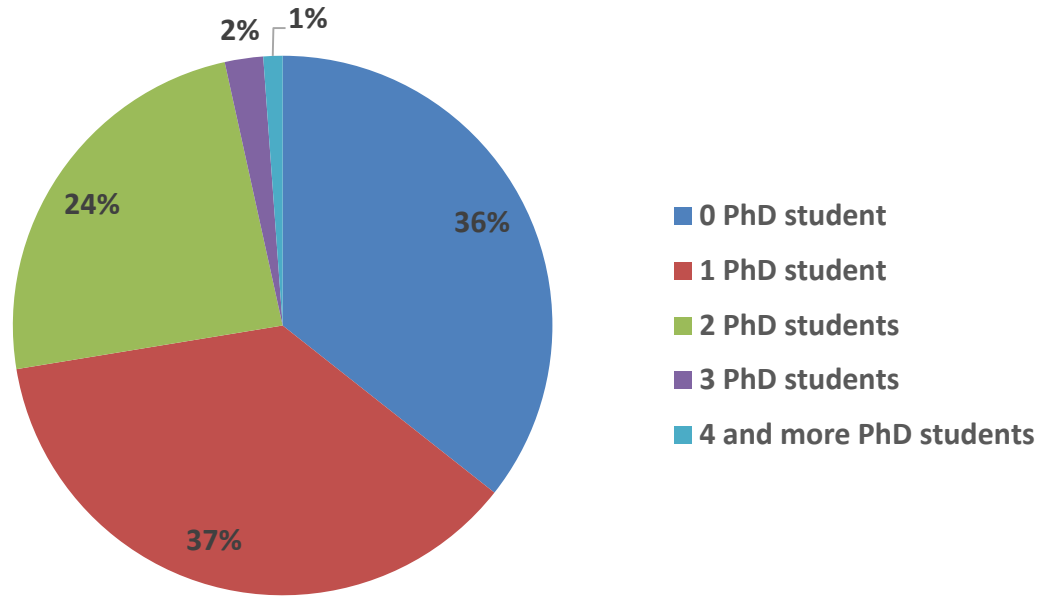
IMPLICATION OF WOMEN (FRANCE) 2006-2022



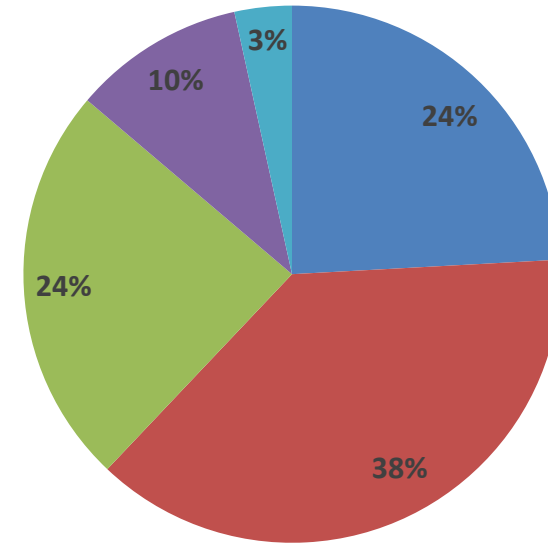
Survey 2018 : 26 programs
Survey 2024 : 50 programs

PARTICIPATION OF YOUNG RESEARCHERS 2006-2022

Number of french PhD students



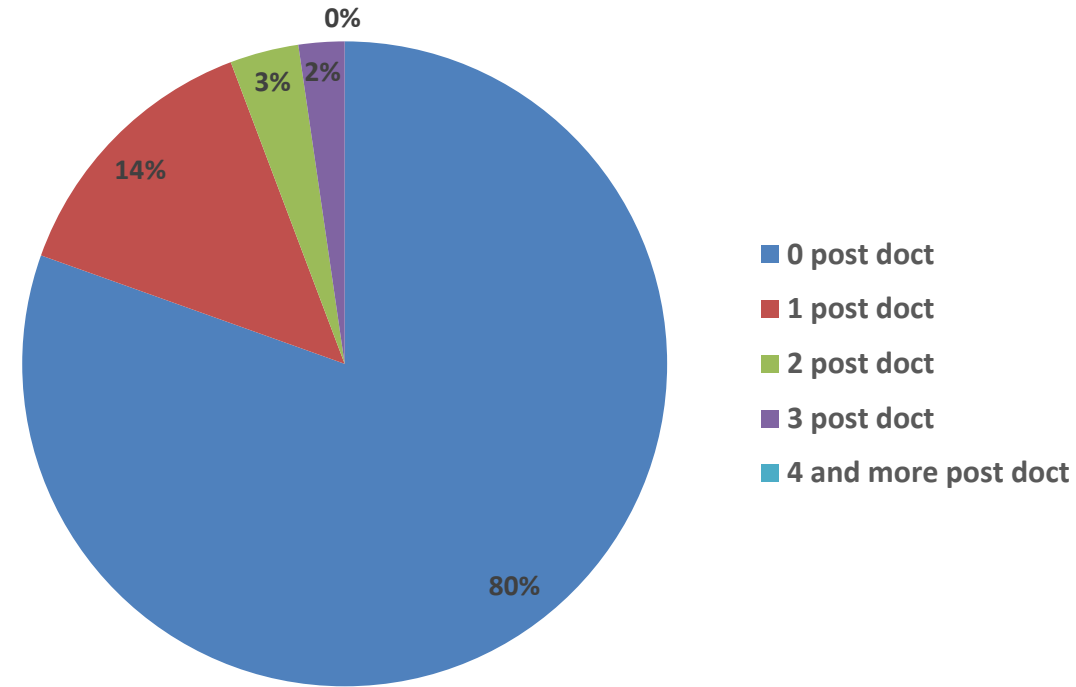
Number of mexican PhD students



64% of projects involve at least one French PhD student and **76%** one Mexican PhD student

Data from 87 responses (surveys 2018 and 2024) for a total of 84 french PhDs and 114 mexican PhDs

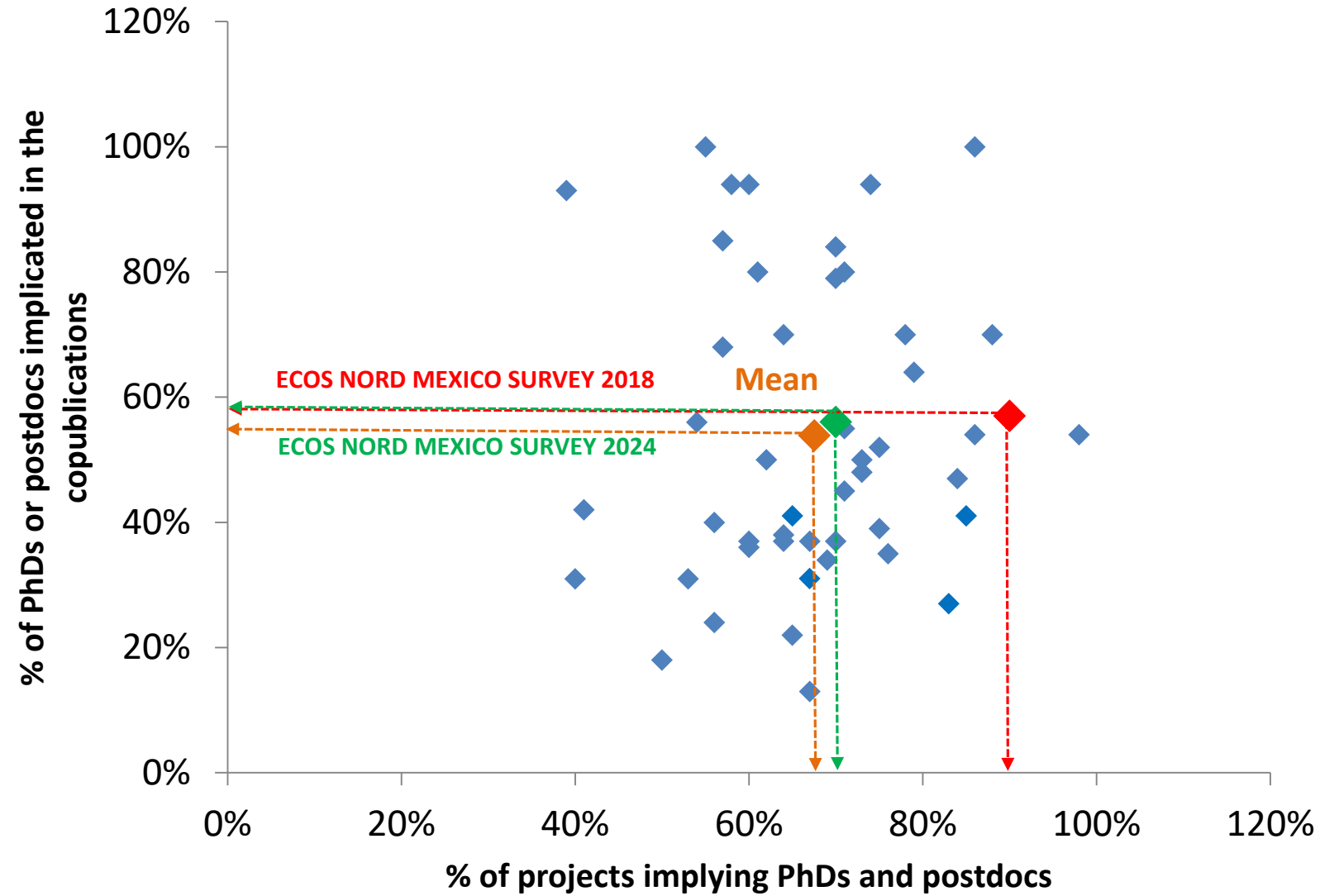
PARTICIPATION OF YOUNG RESEARCHERS 2006-2022



20% of projects involve at least one French or Mexican postdoctoral researcher

Data from 87 responses (surveys 2018 and 2024) for a total of 24 postdoctoral researchers

IMPLICATION OF YOUNG RESEARCHERS IN THE PUBLICATIONS 2007-2019



Survey 2019 : 26 programs

Survey 2023 : 50 programs



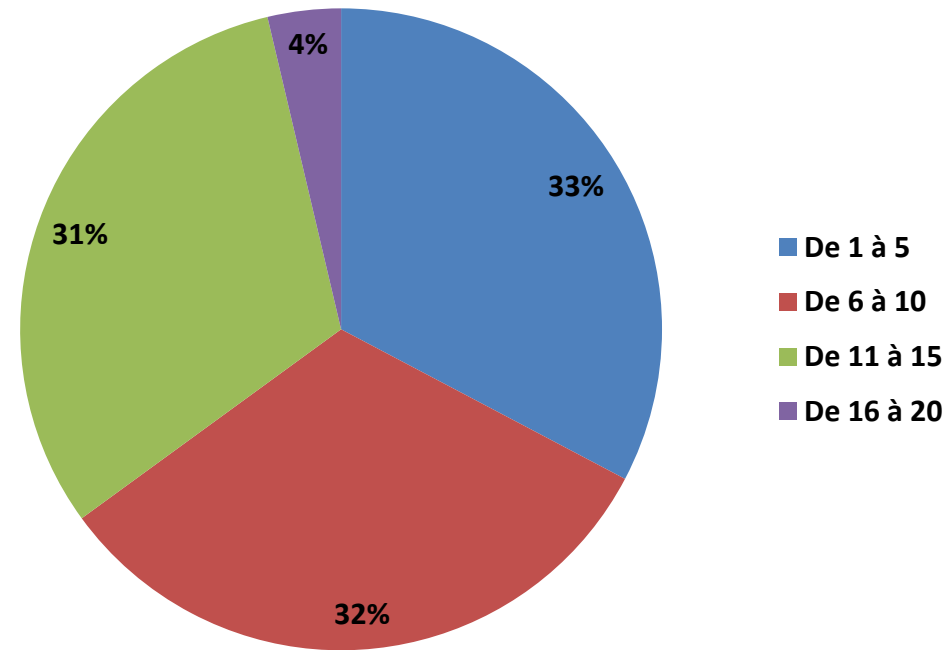
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MOBILITY

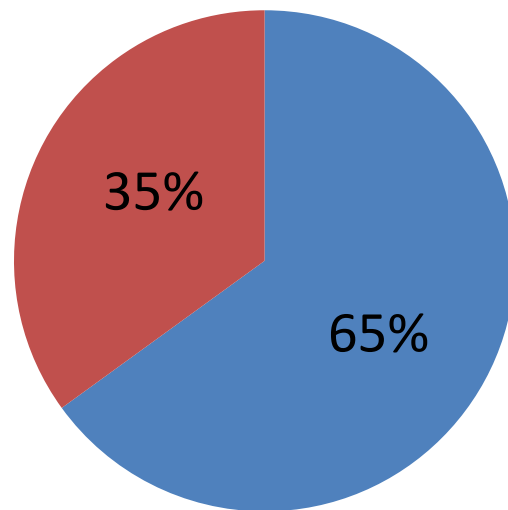
MOBILITIES 2006-2022

Number of mobilities per project

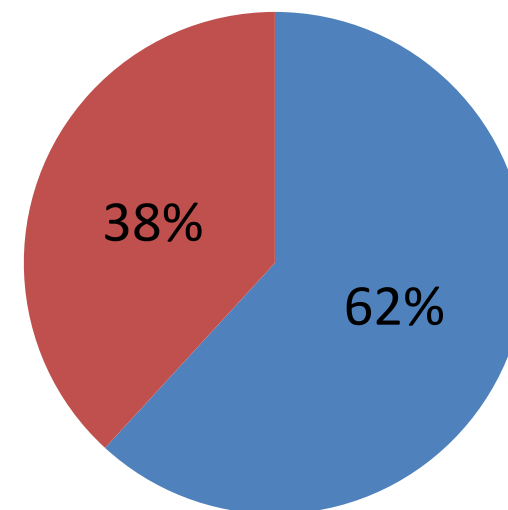


MOBILITY : GENDER DISTRIBUTION 2006-2022

France → Mexico



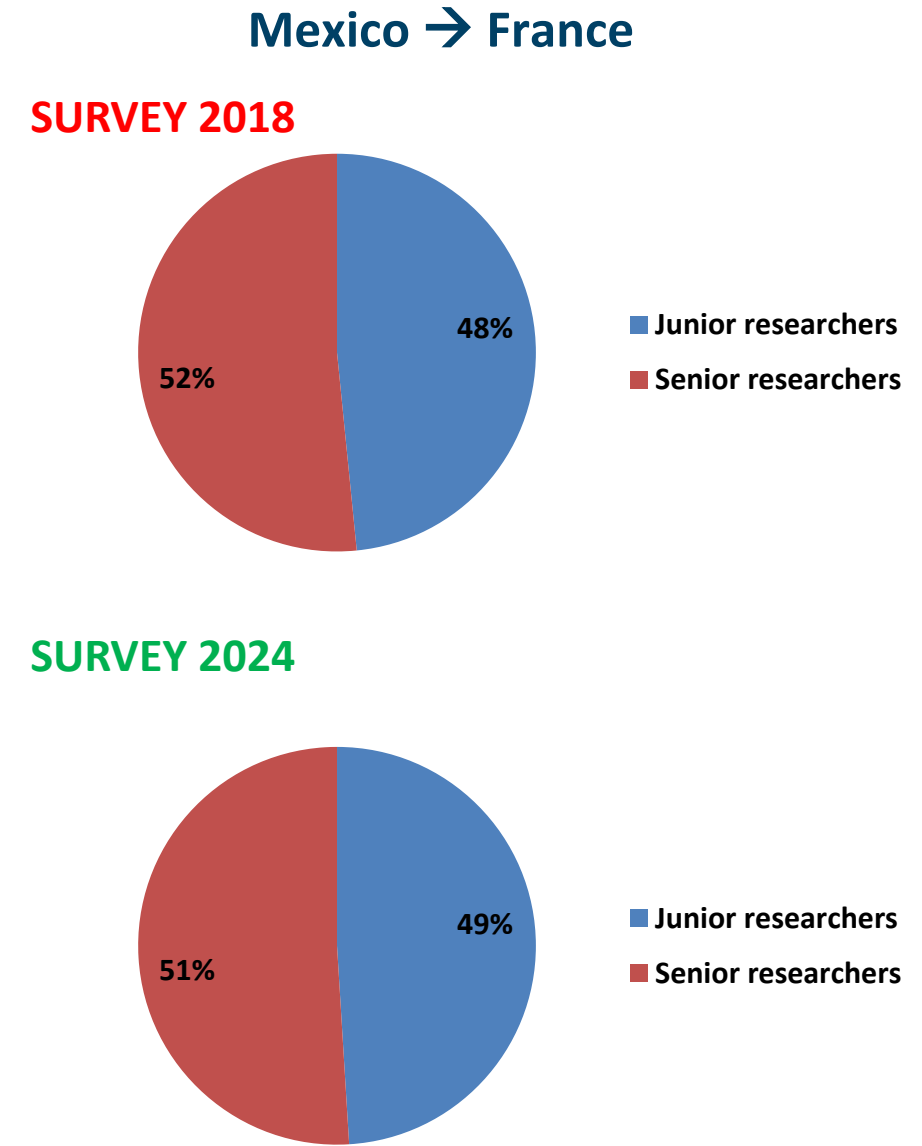
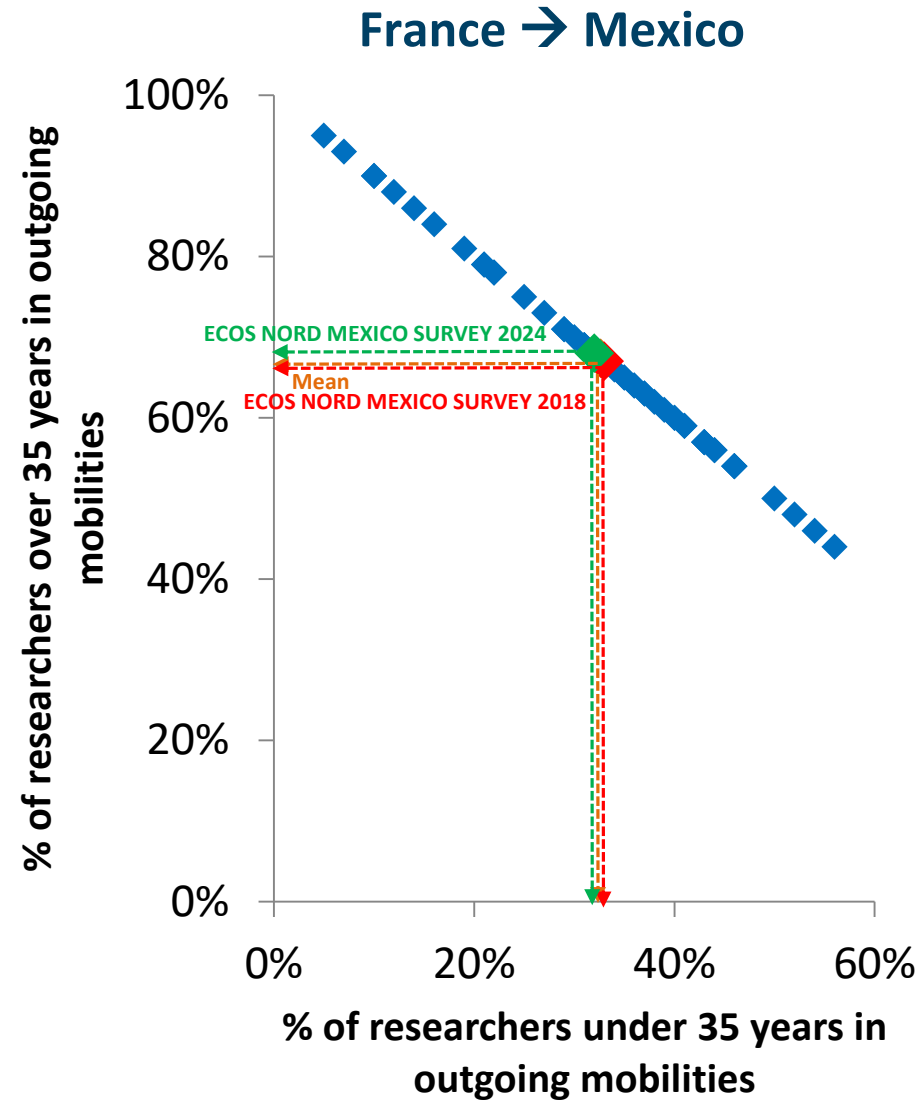
Mexico → France



■ Men ■ Women

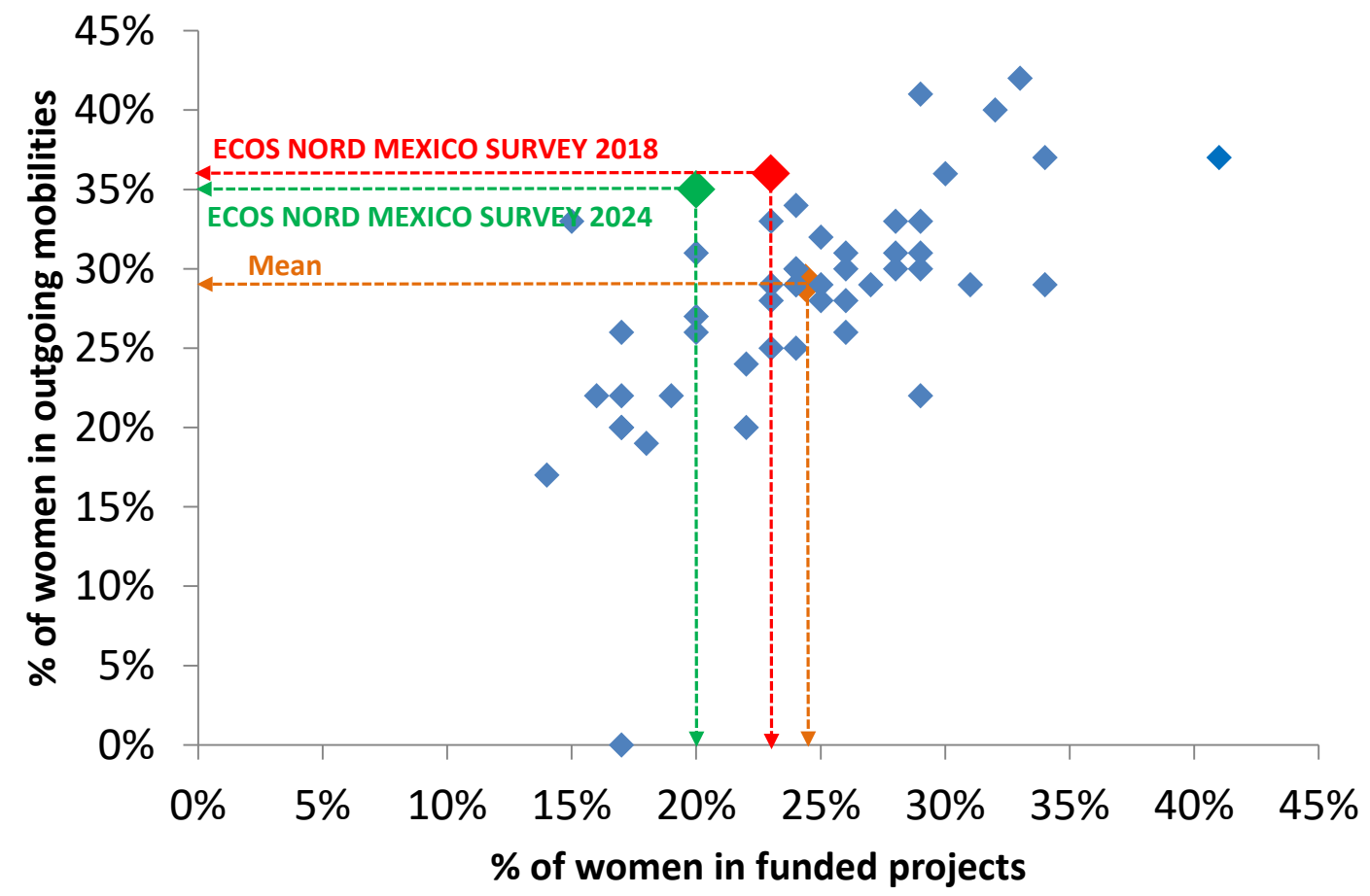
Data from 806 outgoing mobilities and 977 incoming mobilities

YOUNG RESEARCHERS MOBILITY FRANCE – MEXICO



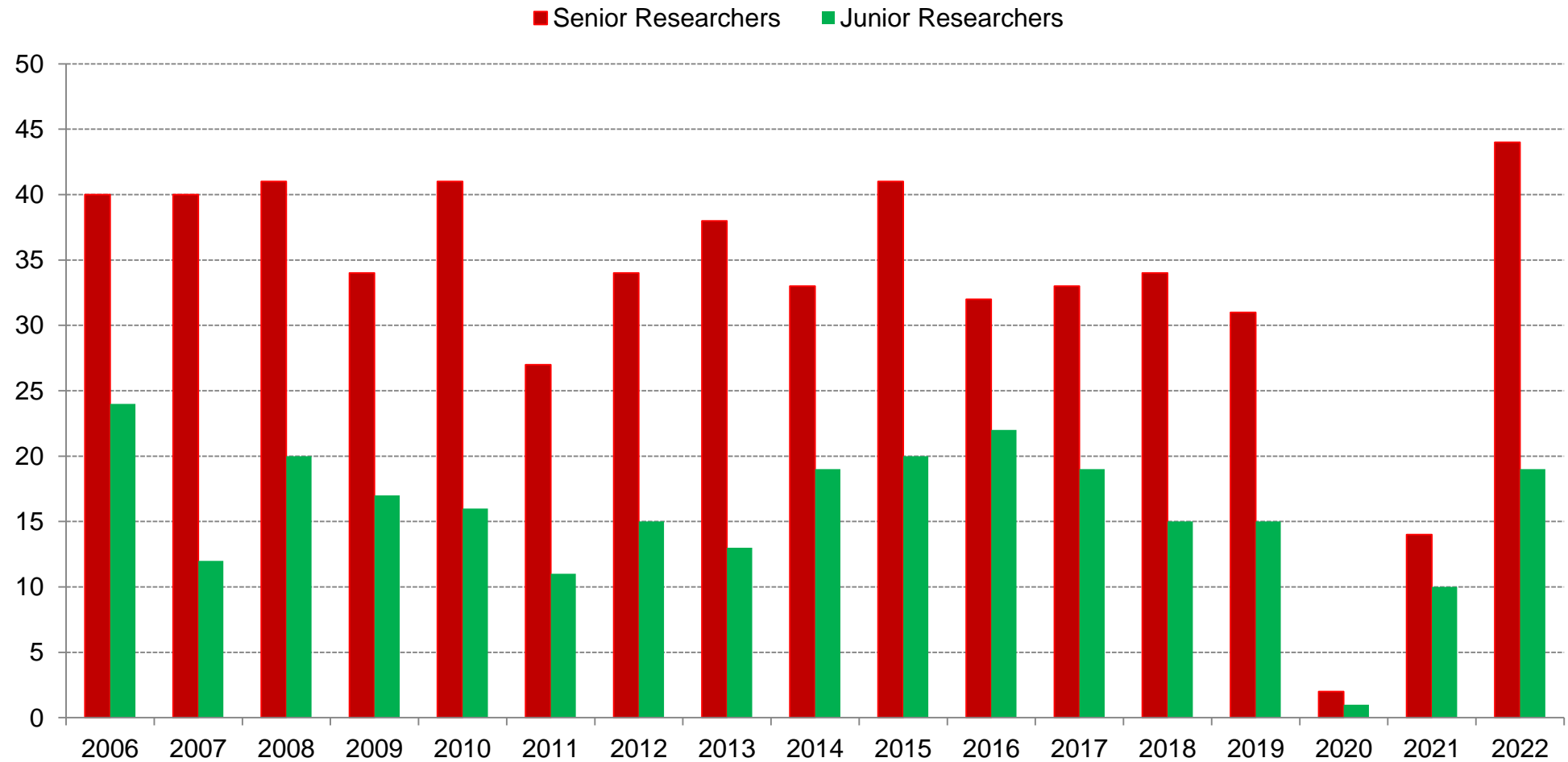
Survey 2018 : 26 programs
 Survey 2024 : 50 programs

WOMEN MOBILITY FRANCE – MEXICO 2006-2022

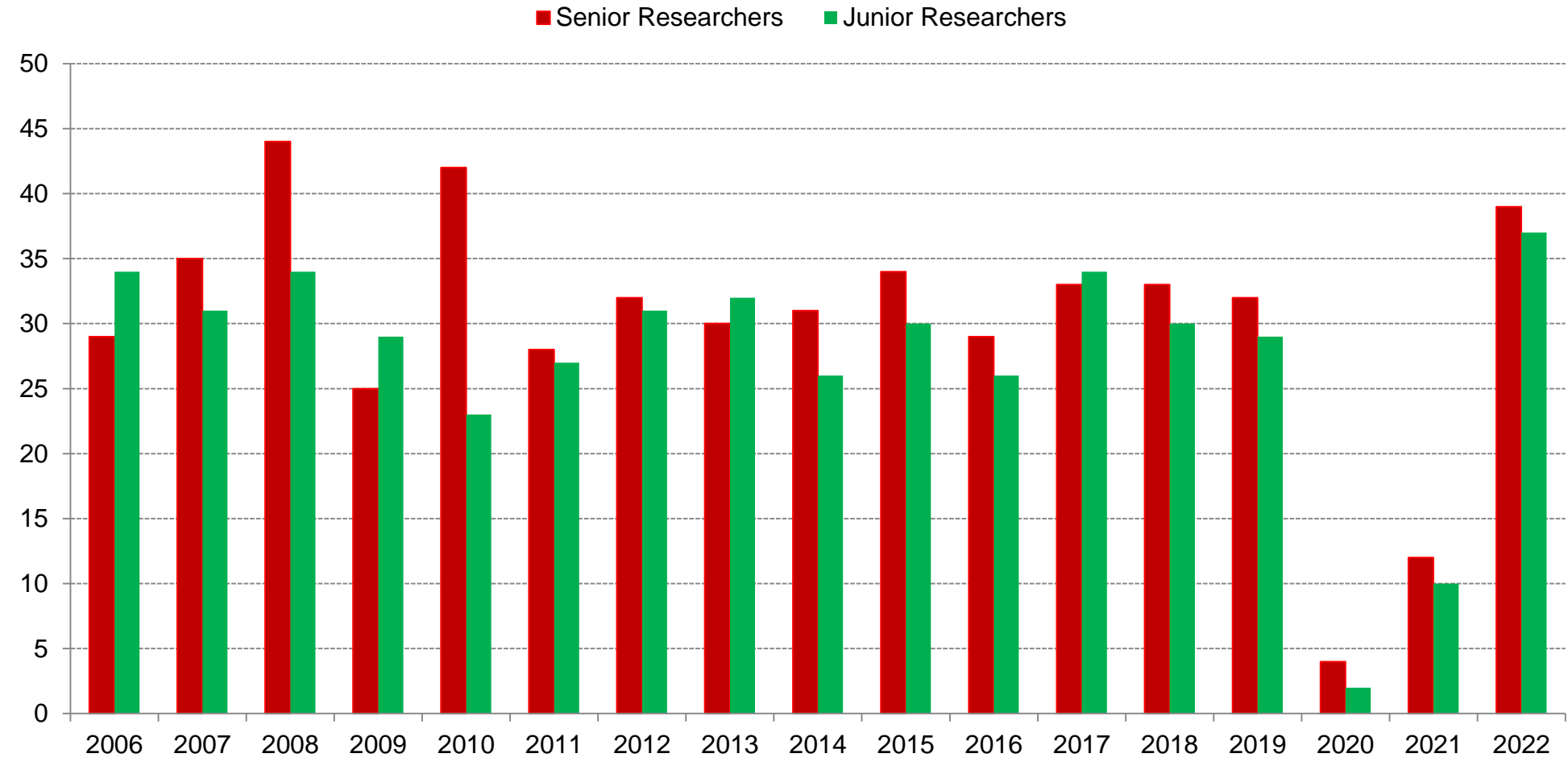


Survey 2018 : 26 programs
Survey 2024 : 50 programs

NUMBER OF MOBILITIES FRANCE – MEXICO 2006-2022

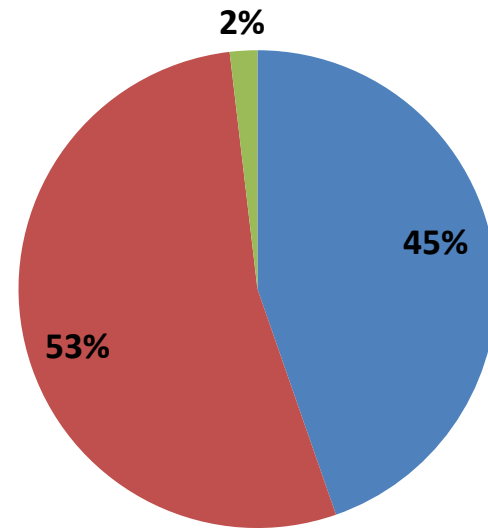


NUMBER OF MOBILITIES MEXICO – FRANCE 2006-2022

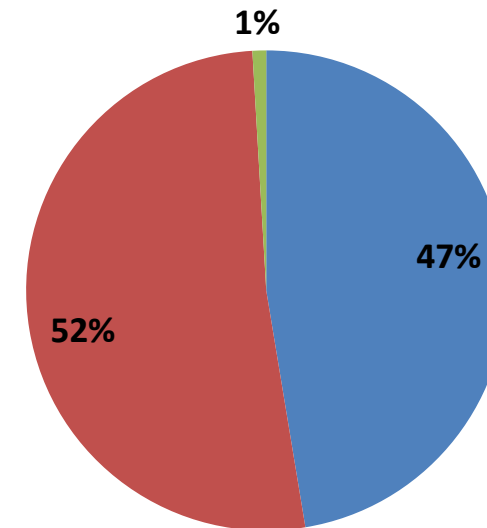


MOBILITY : DURATION 2006-2022

France → Mexico



Mexico → France



- < 15 days
- between 15 days and 3 months
- > 3 months

Data from 806 outgoing mobilities and 977 incoming mobilities



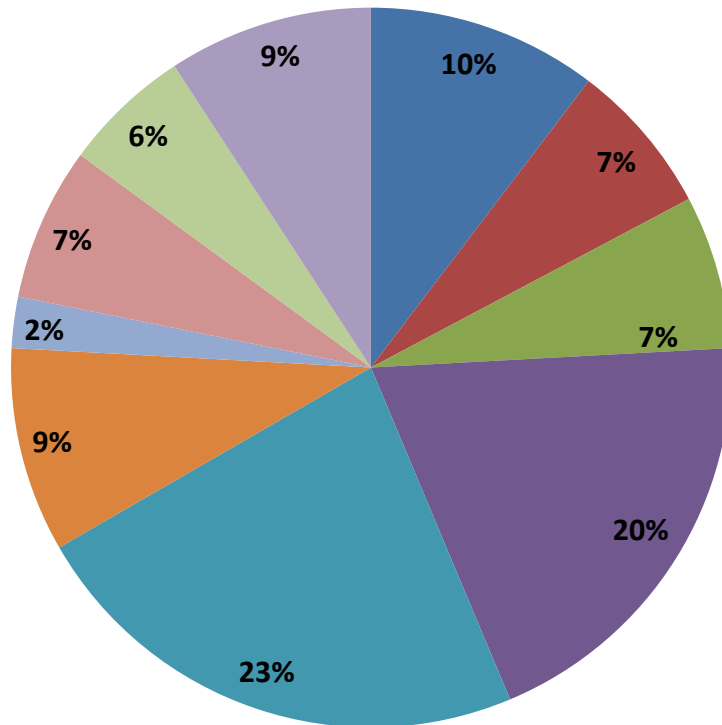
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**SCIENTIFIC
PRODUCTION
(2007-2019)**

SCIENTIFIC PRODUCTION 2007-2019

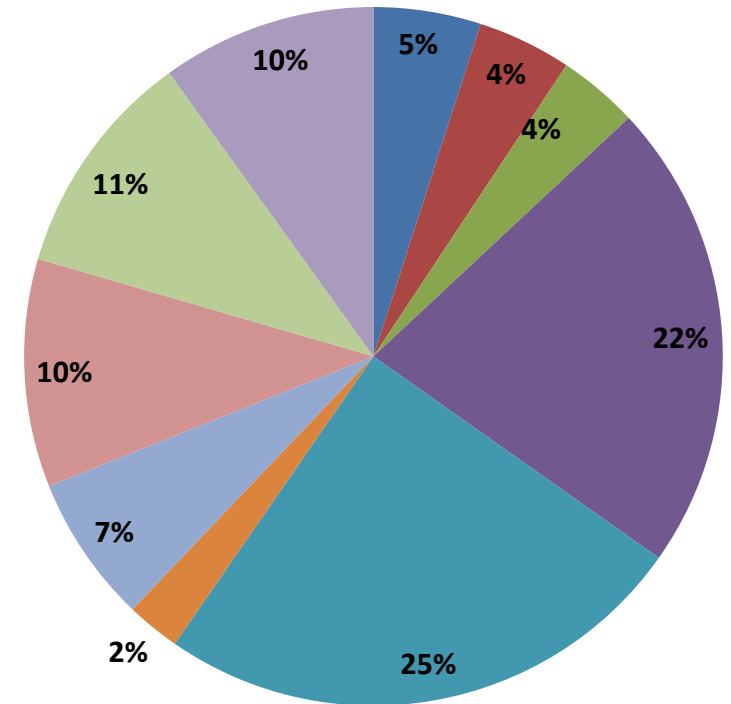
Funded projects 2007-2019 (survey)



Data from 87 responses

- Mathematics
- Physics
- Marine / Earth / Planet Sciences
- Chemistry
- Biology and Health
- Humanities
- Social Sciences
- Engineering Sciences
- Information Technology
- Agronomy / Ecology

Percentage of coproductions



Data from 161 scientific coproductions

SCIENTIFIC PRODUCTION

ENQUETES 2018+2024

| | Number of funded projects 2018 survey | Number of funded projects 2018+2024 surveys | Average annual number of scientific coproductions per project 2018 survey | Average annual number of scientific coproductions per project 2018+2024 surveys |
|------------------------------|--|---|---|--|
| Mathematics | 6 | 9 | 0,21 | 0,22 |
| Physics | 3 | 6 | 0,33 | 0,29 |
| Marine/Earth/Planet Sciences | 3 | 6 | 0,50 | 0,25 |
| Chemistry | 7 | 17 | 0,75 | 0,51 |
| Biology and Health | 7 | 20 | 0,43 | 0,50 |
| Humanities | 8 | 8 | 0,13 | 0,13 |
| Social Sciences | - | 2 | - | 1,38 |
| Engineering Sciences | - | 6 | - | 0,71 |
| Information Technology | 3 | 5 | 1,25 | 0,85 |
| Agronomy / Ecology | 5 | 8 | 0,80 | 0,50 |
| TOTAL/MOYENNE | 42 | 87 | 0,49 | 0,46 |

Overall average annual number of scientific coproductions per project 2018 : 0,49 vs 0,96 mean
Overall average annual number of scientific coproductions per project 2018+2024 : 0,46

Enquête 2018+2024

46% of funded projects led to at least 1 scientific coproduction (vs 48% survey 2018)

70% scientific coproductions involve at least 1 young researcher (vs 65% survey 2018)

The average annual rate of publication of young researchers implicated in the projects is **0,27** (vs 0,14 survey 2018)

The average annual rate of young researchers implicated in the scientific coproductions is **0,48** (no data from survey 2018)

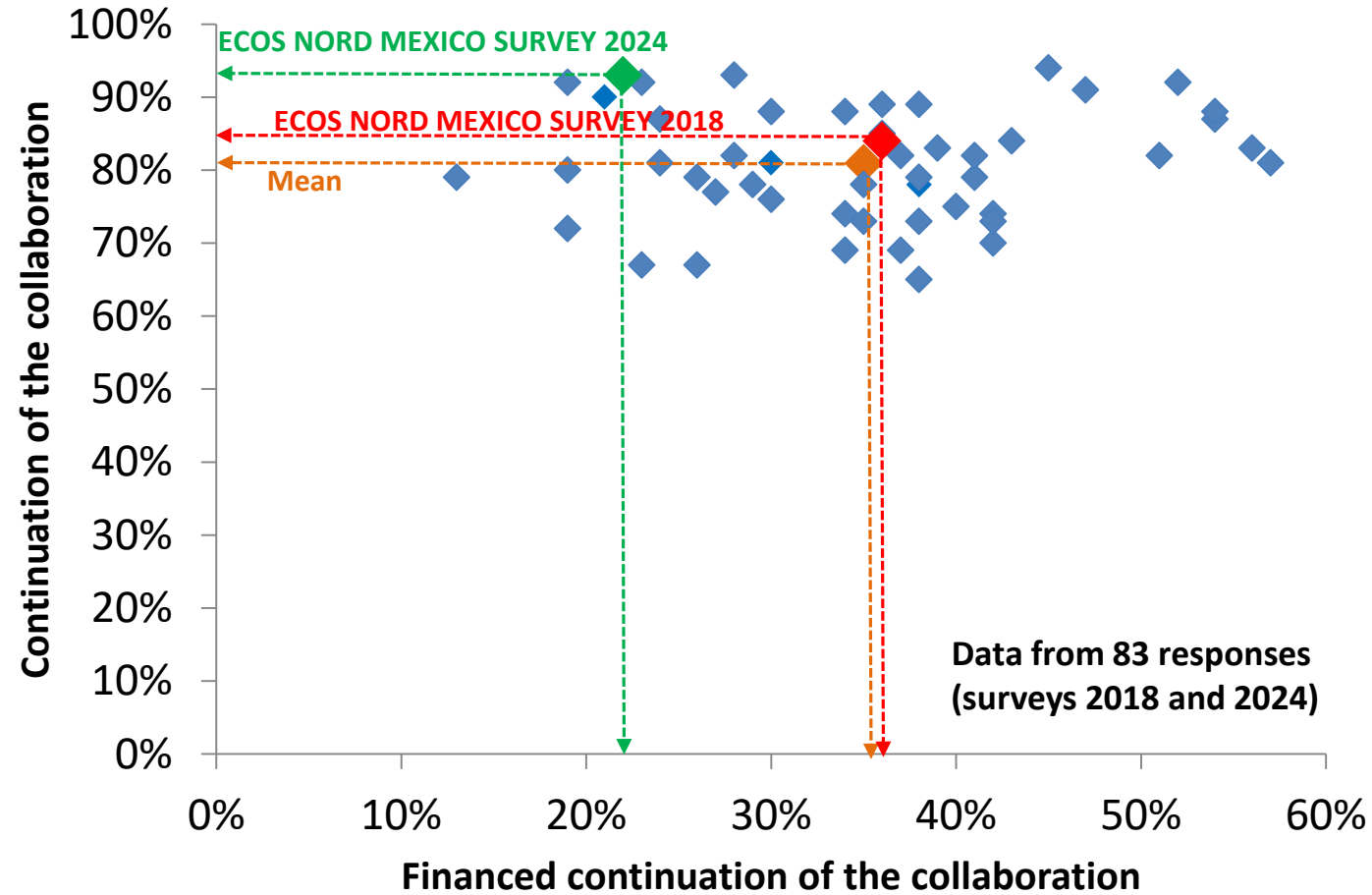


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WHAT HAPPENS AFTER A ECOS NORD MEXICO PROJECT ?

CONTINUATION OF THE COOPERATION 2006-2022



Survey 2018 : 26 programs

Survey 2024 : 50 programs

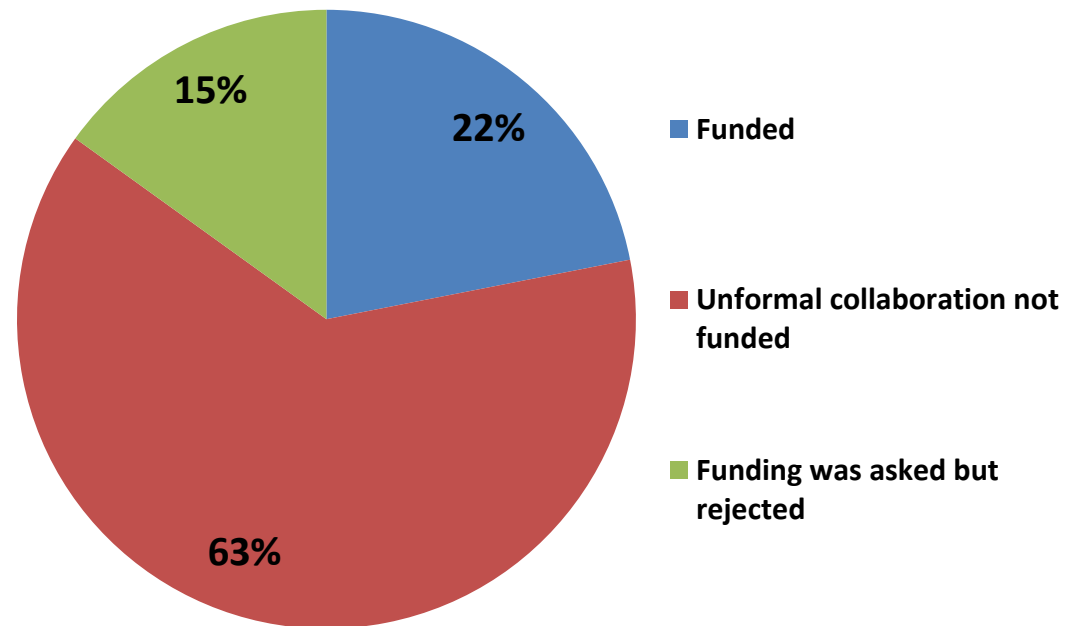
CONTINUATION OF THE COOPERATION 2006-2022

93% of the cooperations continued after the ECOS NORD MEXICO project

| Which activities? | |
|--|-----|
| Cooperative research | 62% |
| Scientific co-productions | 53% |
| Researchers mobilities | 53% |
| Joint participation to conferences | 29% |
| Co-organisation of scientific events | 26% |
| PhD mobilities | 25% |
| Co-tutored and jointly supervised theses | 19% |
| Joint diplomas (Master, PhD...) | 3% |
| Other | 9% |

CONTINUATION OF THE COOPERATION 2006-2022

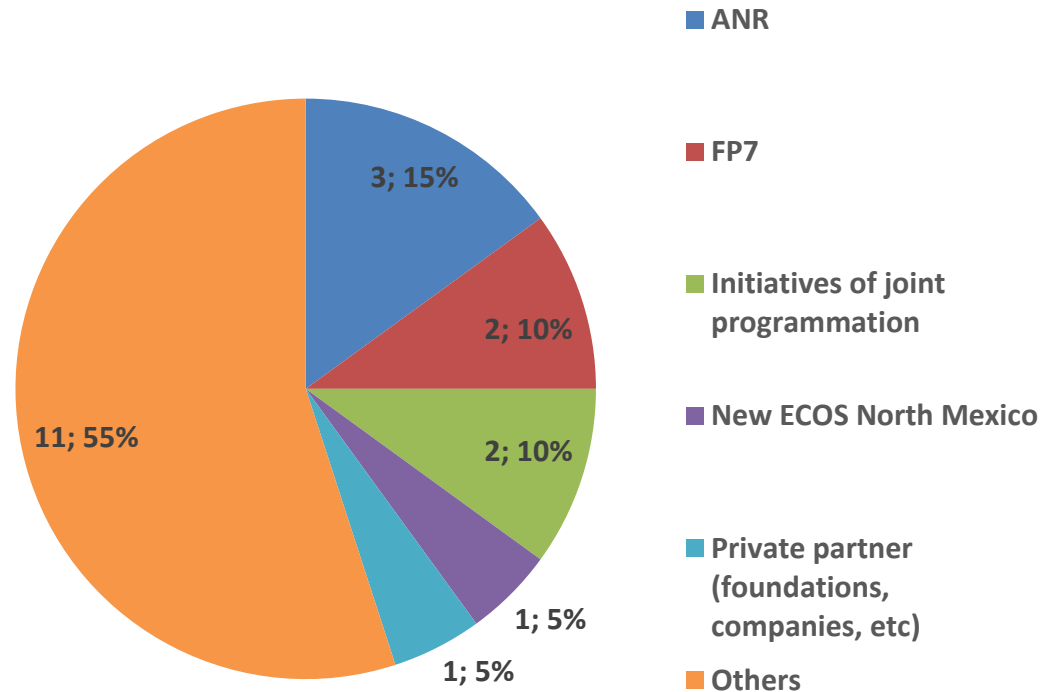
22% of cooperations have been funded following the project



Data from 73 responses

CONTINUATION OF THE COOPERATION 2006-2022

What kind of funded collaborations after the ECOS NORD MEXICO project ?

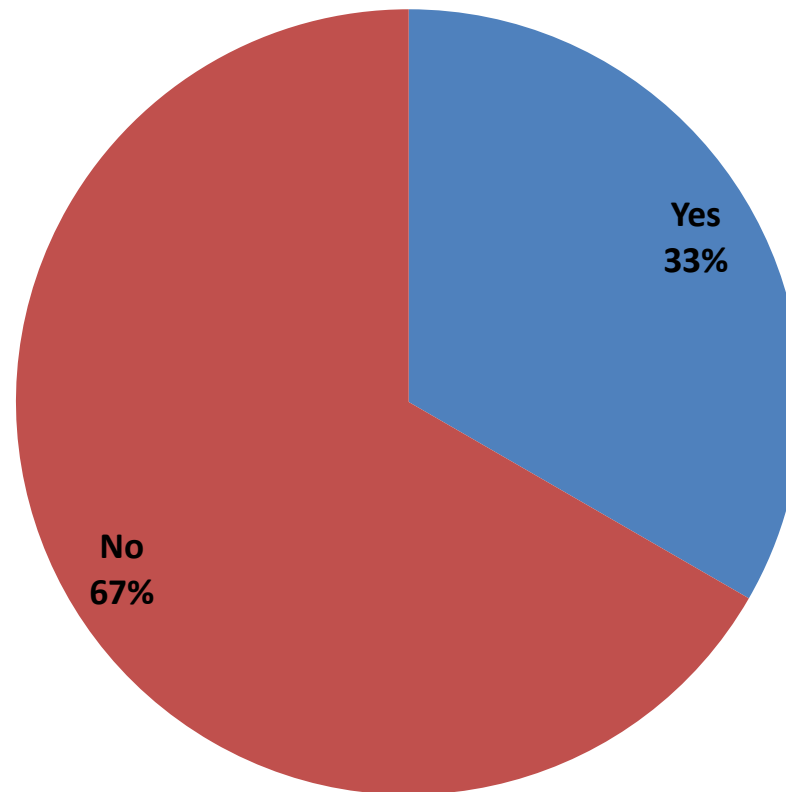


| Other sources of funding |
|---|
| Mexican UANL |
| Conacyt grant |
| CONACYT research funding |
| project PAPIIT IT300113 and project SEP-CONACYT |
| Labex OCEVU / CNES / CNRS / CONACYT / Labex FOCUS |
| International Associated Laboratory |
| CNRS International Funding |
| IRD International Funding |

Data from 18 responses

CONTINUATION OF THE COOPERATION 2006-2022

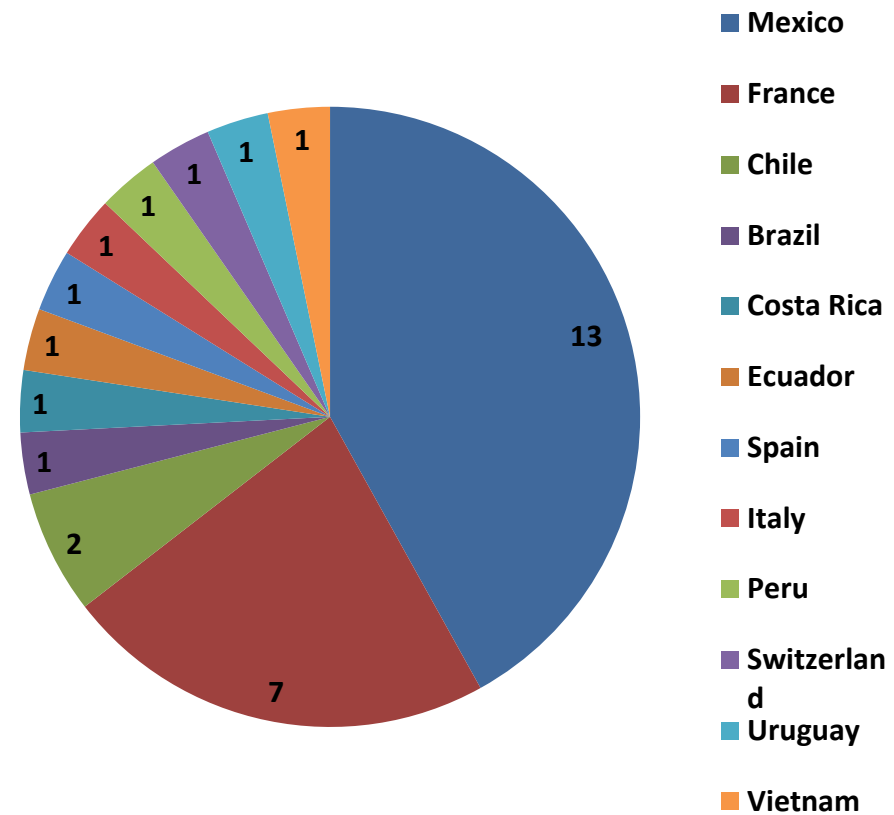
Has the French-Mexican cooperation involved new partners?



Data from 75 responses

CONTINUATION OF THE COOPERATION 2006-2022

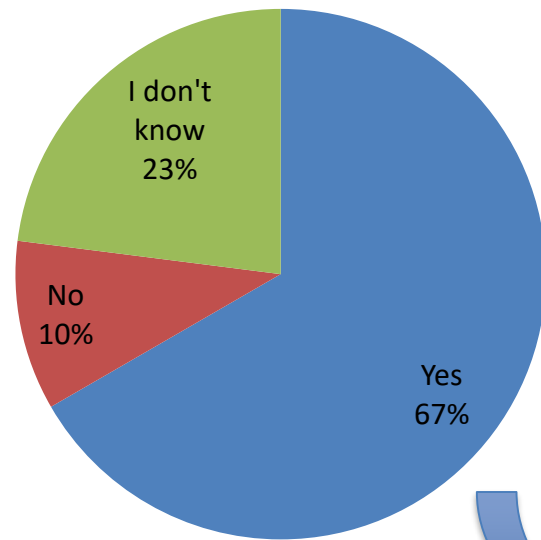
If the French-Mexican cooperation involves new partners, list with which countries



Data from 22 responses

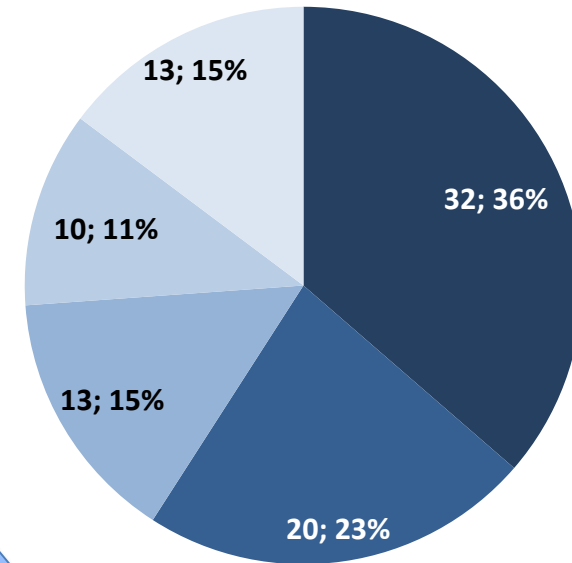
IMPACT ON YOUNG RESEARCHERS' CAREER (2006-2022)

Was young researchers' career impacted by the ECOS NORD MEXICO program ?



Data from 87 responses

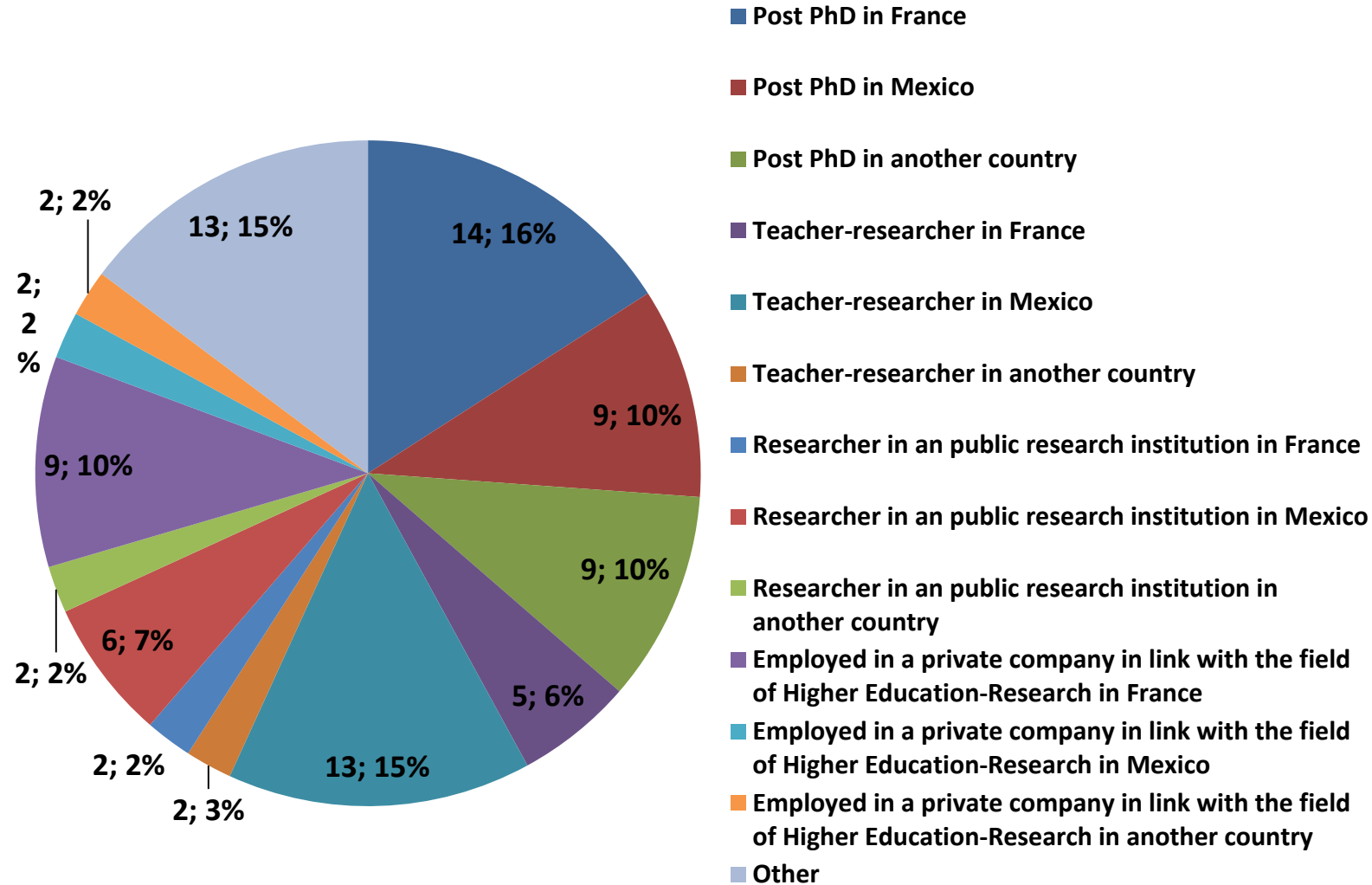
Type of impacts



Data from 55 positive responses for a total of 88 young researchers

- Postdoc/Teacher/Researcher (temporary position)
- Teacher/Researcher (permanent position)
- Employed in a private company in link with the field of Higher Education - Research
- Researcher in a public research institution (permanent position)
- Other

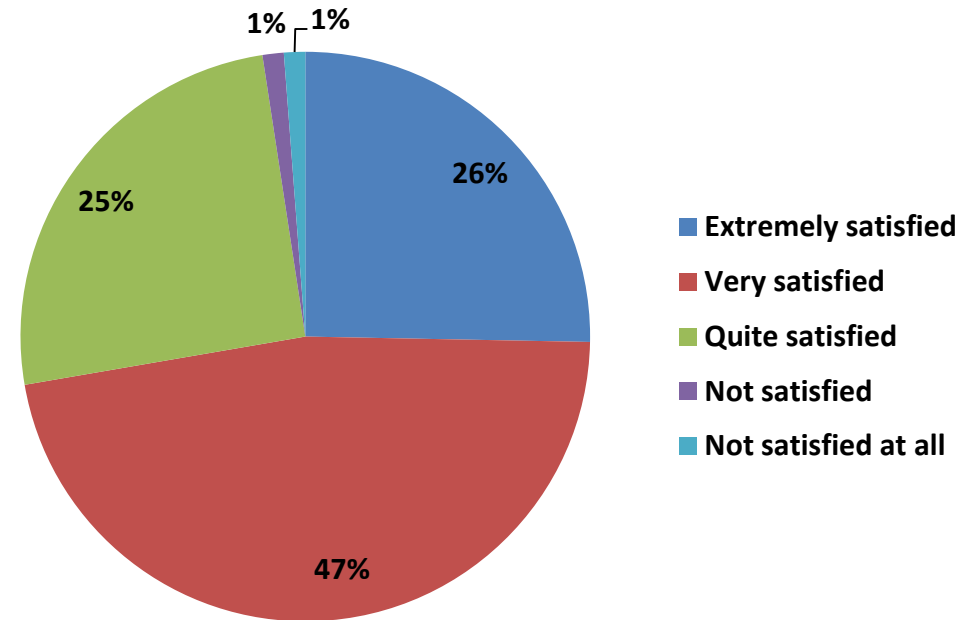
IMPACT ON YOUNG RESEARCHERS' CAREER 2006-2022



Data from 55 responses for a total of 88 young researchers

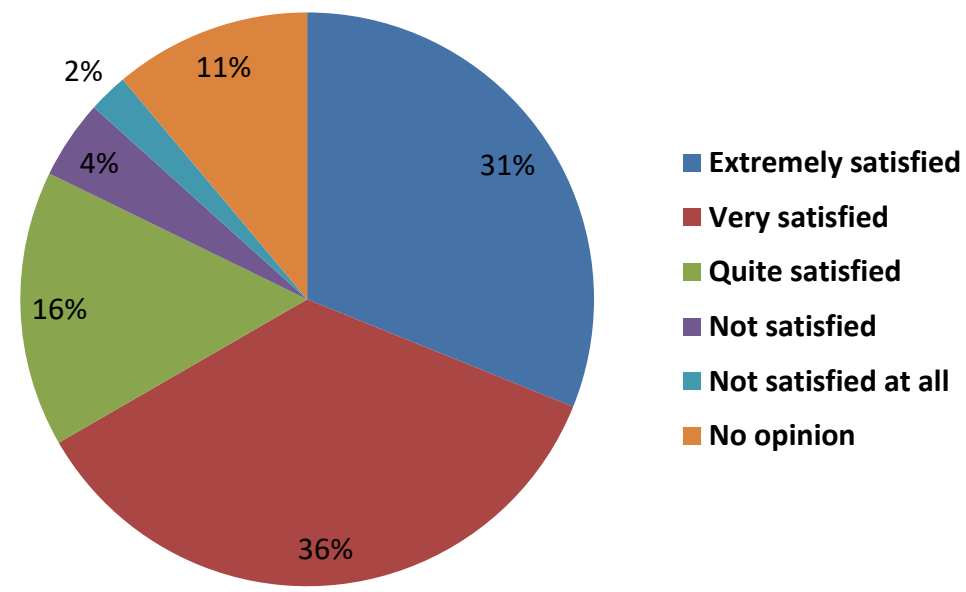
GENERAL OPINION OF FRENCH PIS ON THE PROGRAM 2006-2022

98% of French principal investigators are satisfied



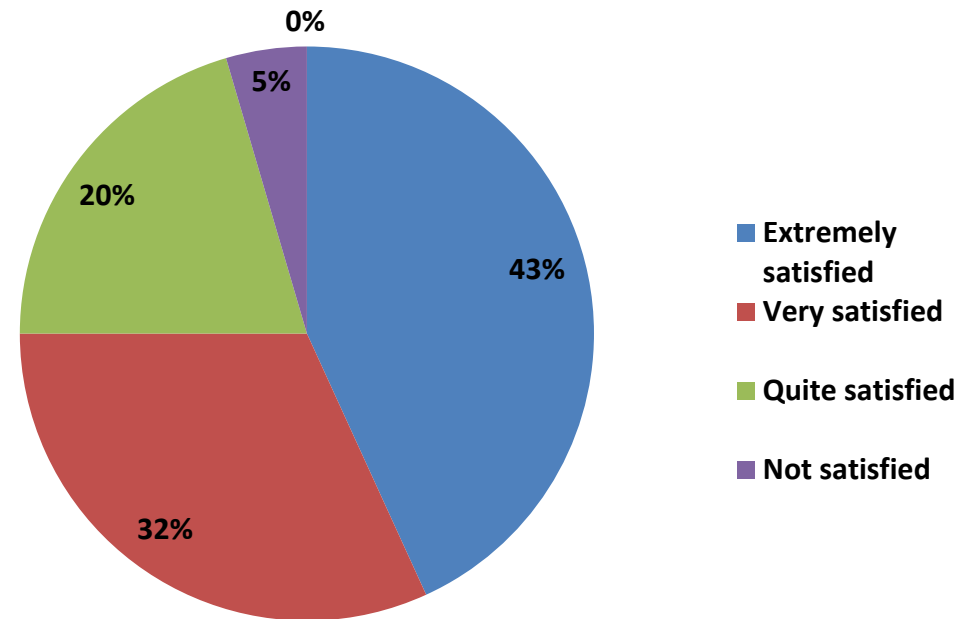
Data from 83 responses

OPINION OF FRENCH PIS ABOUT FRENCH EMBASSY HELP 2006-2022



Data from 45 responses

OPINION OF FRENCH PIS ABOUT ECOS COMMITTEE HELP 2006-2022



Data from 44 responses

GENERAL OPINION OF FRENCH PIS ON THE PROGRAM 2006-2022

POSITIVE COMMENTS



| Strengths of this program | Number of occurrences (out of 318) | % of funded projects |
|---|------------------------------------|----------------------|
| Fostering researchers' mobility | 40 | 89% |
| Fostering an international scientific cooperation | 37 | 82% |
| Fostering the training of the young researchers | 31 | 69% |
| Fostering exchanges enabling scientific production | 31 | 69% |
| Sufficiently long duration of the projects | 25 | 56% |
| Helping to know the partner country | 24 | 53% |
| Simplicity of the application process | 22 | 49% |
| Sufficient financial means for the mobility costs | 19 | 42% |
| Good scientific-added value on financial investment | 17 | 38% |
| Easy implementation (administrative flexibility) | 16 | 36% |
| Financial autonomy towards your institution | 14 | 31% |
| Sufficient amount of mobility time given to collaborate | 13 | 29% |
| Implementation schedule | 9 | 20% |
| Flexibility of the program for actions co-financed with the mexican partner | 8 | 18% |
| Helpful to initiate other fundraising | 7 | 16% |
| Transparency of the selection process | 4 | 9% |
| Other | 1 | 2% |
| <i>Total number of occurrences</i> | 318 | |

GENERAL OPINION OF FRENCH PIS ON THE PROGRAM 2006-2022 NEGATIVE COMMENTS



| Weaknesses of this program | Number of occurrences (out of 94) | % of funded projects |
|---|-----------------------------------|----------------------|
| Insufficient financial means to cover a project | 21 | 47% |
| Difficult to continue the cooperation | 12 | 27% |
| Financial means insufficient for the expenditure of mobility (per diem) | 11 | 24% |
| Lack of transparency in the selection process | 6 | 13% |
| Financial means insufficient for the expenditure of mobility (transport) | 6 | 13% |
| Administrative heaviness of the missions management | 6 | 13% |
| Heaviness of the process of applications | 5 | 11% |
| Too low number of mobilities | 5 | 11% |
| Insufficient communication on the evaluation's results | 4 | 9% |
| Too short duration of mobilities | 4 | 9% |
| Length of support too short | 2 | 4% |
| Implementation schedule | 2 | 4% |
| Too long duration of mobilities | 1 | 2% |
| Flexibility of the program for actions co-financed with the mexican partner | 1 | 2% |
| Financial autonomy towards your institution | 0 | 0% |
| Other | 8 | 18% |
| <i>Total number of occurrences</i> | 94 | |

PRELIMINARY CONCLUSIONS

Preliminary conclusions suggest that the funding scheme has efficiently contributed to create (or to maintain) fruitful and long-term cooperation.

Rather stable number of applications

First cooperation with Latin America for 63% of laureates

Implication of women candidates and laureates close to the general mean

A large proportion of funded projects with the participation of at least one young french (64%) or mexican (76%) PhD student

Implication of french and mexican young researchers in the scientific coproductions close to the general mean (56% vs 54%)

Implication of young researchers in the mobilities better for mexican partners than for french partners

Continuation of the cooperation without funding better than the mean of the other programs (93%)

Ongoing cooperation involves new partners in 33% of the projects



71% of the cooperations with the same previous mexican partner

Previous ECOS funding for 51% of laureates

A low percentage of young applicants and laureates

Low implication of postdoctoral researchers in the projects (20%)

Average annual scientific coproductions below the general mean (0,46 vs 0,96)

Financed continuation of the cooperation below the general mean (22%)



COMPARISON SURVEY 2018 (2006-2015) – SURVEY 2024 (2006-2022)

- **Response rate : 2018 : 49% (42 responses), 2024 : 62% (45 responses)**
- **Stability in the average annual number of applications**
- **Stability in the number of selected projects carried by young researchers (6% vs 7%)**
- **Stability in the number of women applicants (24% vs 21%) and laureates (20% vs 23%)**
- **Decrease of the participation of young french researchers to the projects (-20%) but apparent stability for their involvement in the scientific coproductions (-1%)**
- **Stability in the outgoing mobilities of french young researchers (33%) and the incoming mobilities of mexican young researchers (49% vs 48%)**
- **Stability in the outgoing mobilities for women researchers (36% vs 35%)**
- **Small decrease in the average annual number of scientific coproductions per project (-0,03)**
- **Increase of the continuation of cooperations (93% vs 84%)**
- **Decrease in the continuation of cooperations with financing (36% vs 22%)**

PRELIMINARY RECOMMANDATIONS

- **Encourage new cooperations (only 29% of cooperations with a new partner)**
- **Encourage young researchers applications (only 6% of laureates under 40 years old)**
- **Encourage women researchers applications (only 24%)**
- **Enhance scientific coproductions (from the surveys : 54% of projects with no scientific coproduction, 0,46 coproduction in average per project and per year)**
- **Promote both outgoing (33%) and incoming (49%) mobilities of young researchers**



French national ministries (MESR / MEAE) will provide a complete analysis of the survey. It will be sent to the recipients of the funding who participated in this survey and attendants to this symposium.

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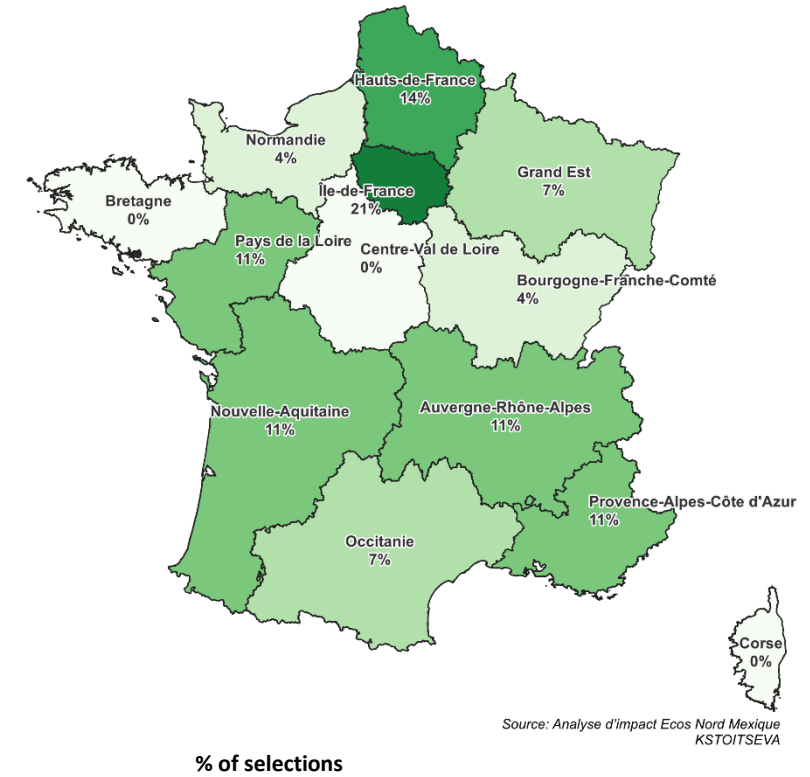
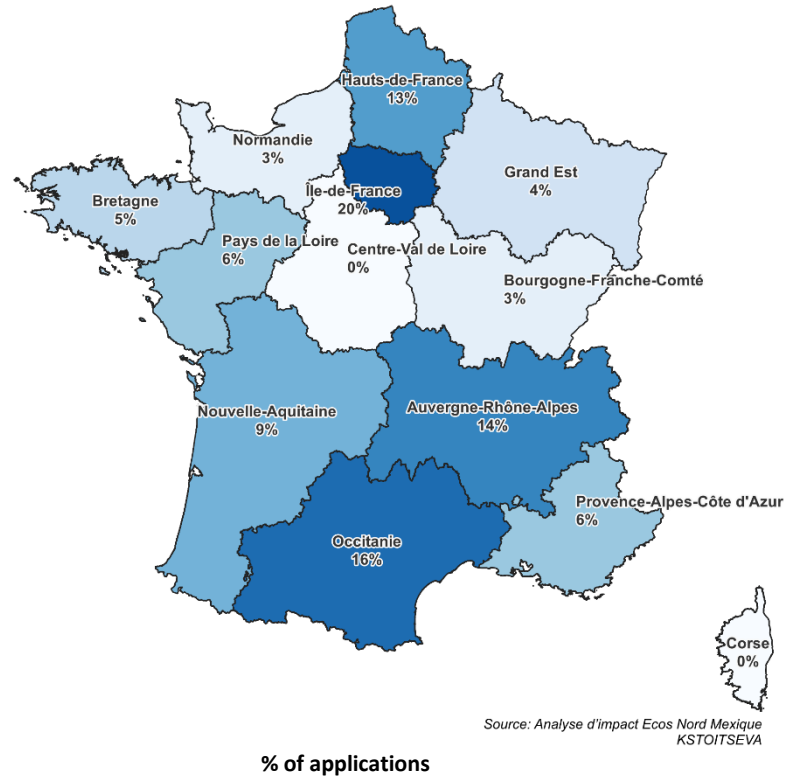
**MINISTÈRE
DE L'ENSEIGNEMENT
SUPÉRIEUR
ET DE LA RECHERCHE**

*Liberté
Égalité
Fraternité*

ANNEX REGIONALISATION AND SCIENTIFIC DOMAINS (CARTOGRAPHIES)

REGIONAL DISTRIBUTION OF SELECTED PROJECTS 2006-2022

Program ECOS NORD MEXICO Regional percentages of applications and selections *Mathematics, Information Technology, Engineering Sciences 2006-2022*

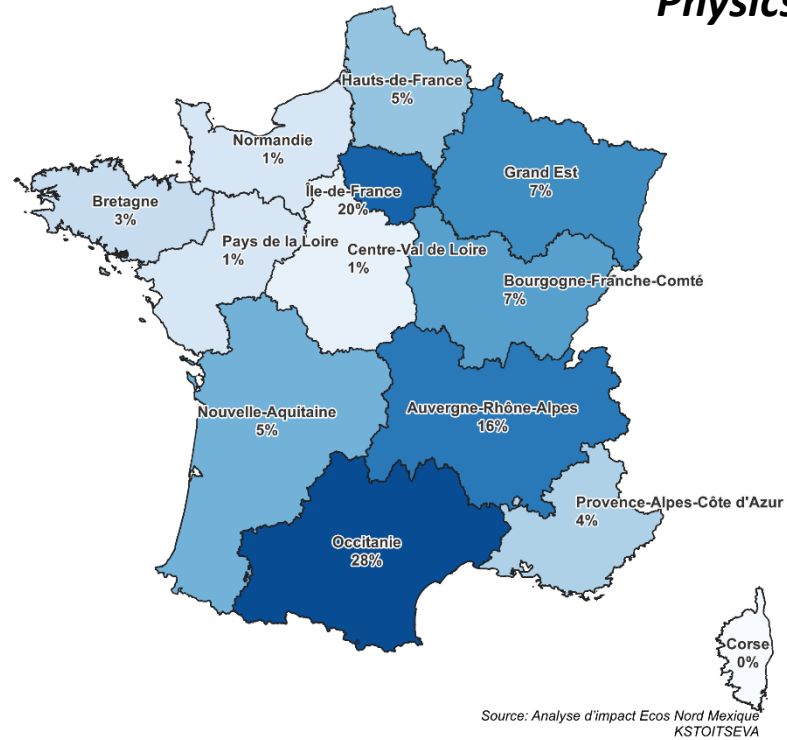


Almost all regions are concerned : Ile de France is the main contributor followed by Occitanie

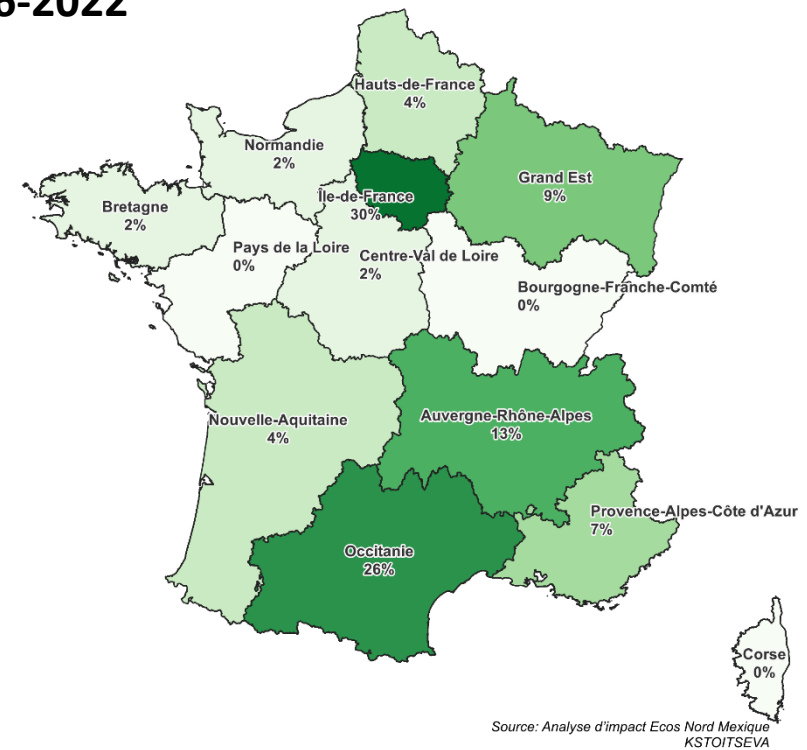
% OF REGIONAL APPLICATIONS/SELECTIONS FOR EACH SCIENTIFIC DOMAIN AS COMPARED TO THE TOTAL NUMBER OF APPLICATIONS/SELECTIONS IN THE SCIENTIFIC DOMAIN

REGIONAL DISTRIBUTION OF SELECTED PROJECTS 2006-2022

Program ECOS NORD MEXICO Regional percentages of applications and selections *Physics/Chemistry 2006-2022*



% of applications



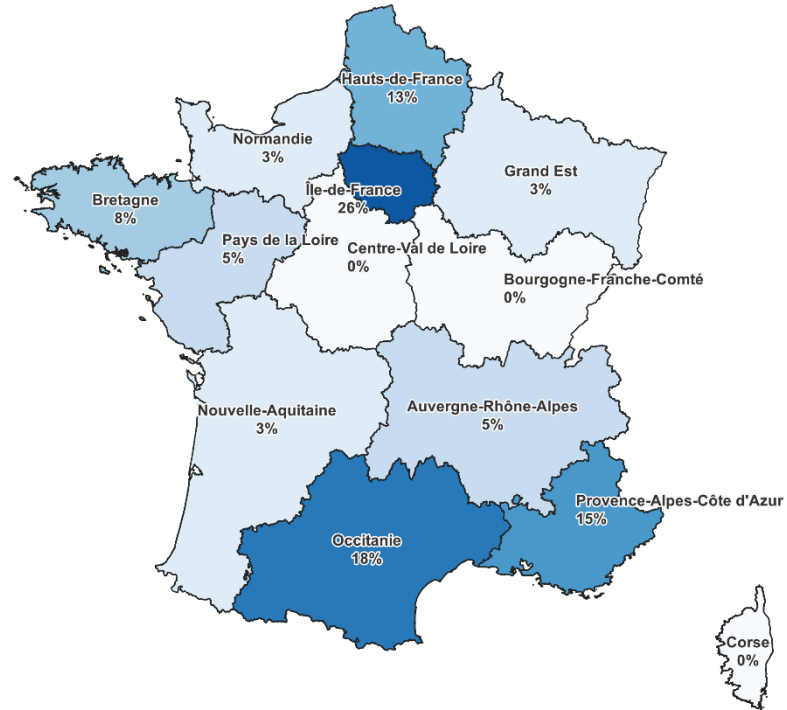
% of selections

Almost all regions are concerned : Occitanie is the main contributor followed by Ile-de-France

% OF REGIONAL APPLICATIONS/SELECTIONS FOR EACH SCIENTIFIC DOMAIN AS COMPARED TO THE TOTAL NUMBER OF APPLICATIONS/SELECTIONS IN THE SCIENTIFIC DOMAIN

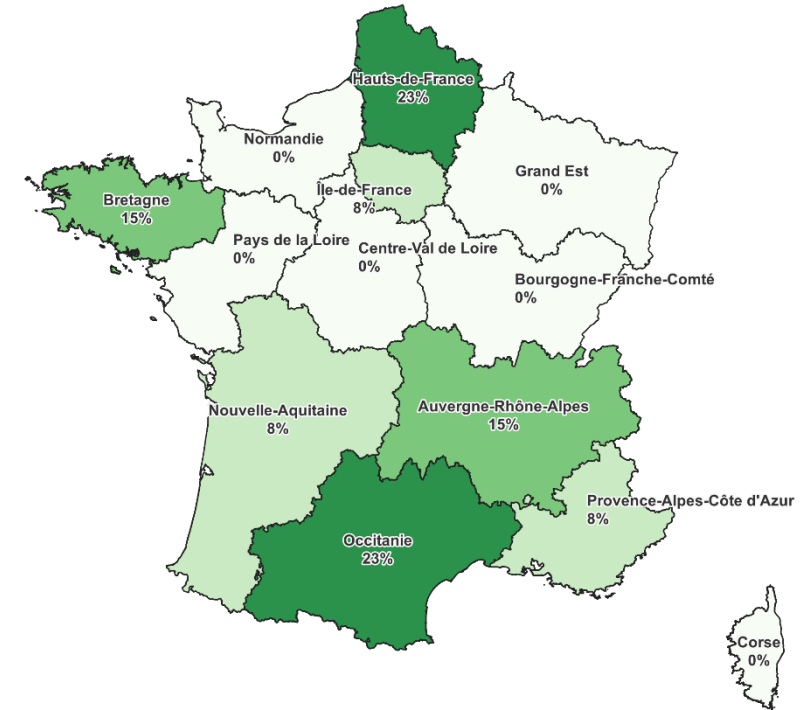
REGIONAL DISTRIBUTION OF SELECTED PROJECTS 2006-2022

Program ECOS NORD MEXICO Regional percentages of applications and selections *Marine, Earth, Planet Sciences 2006-2022*



Source: Analyse d'impact Ecos Nord Mexique
KSTOITSEVA

% of applications



Source: Analyse d'impact Ecos Nord Mexique
KSTOITSEVA

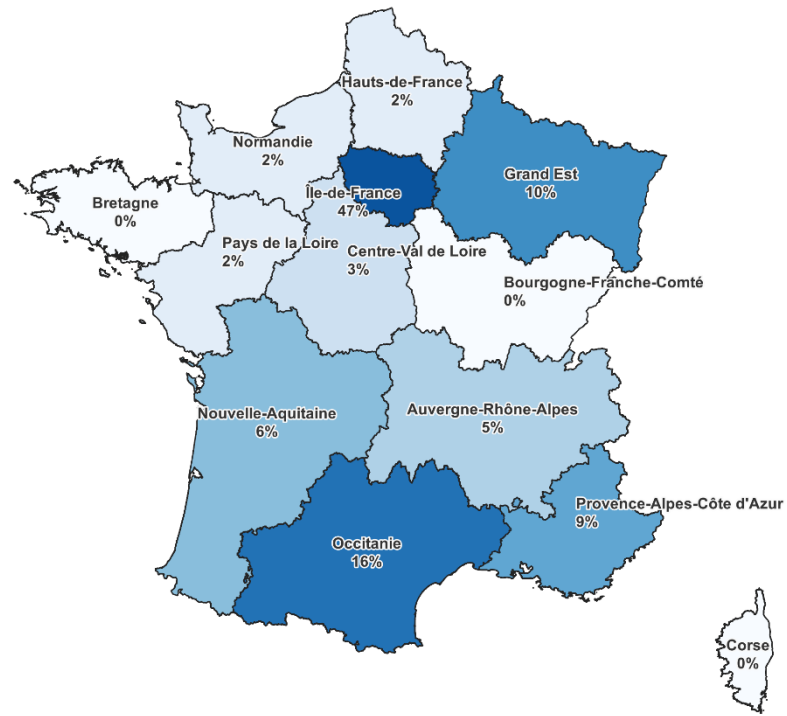
% of selections

Ile-de-France is the main contributor for applications but Occitanie and Hauts-de-France are ahead for selections

**% OF REGIONAL APPLICATIONS/SELECTIONS FOR EACH SCIENTIFIC DOMAIN AS COMPARED TO
THE TOTAL NUMBER OF APPLICATIONS/SELECTIONS IN THE SCIENTIFIC DOMAIN**

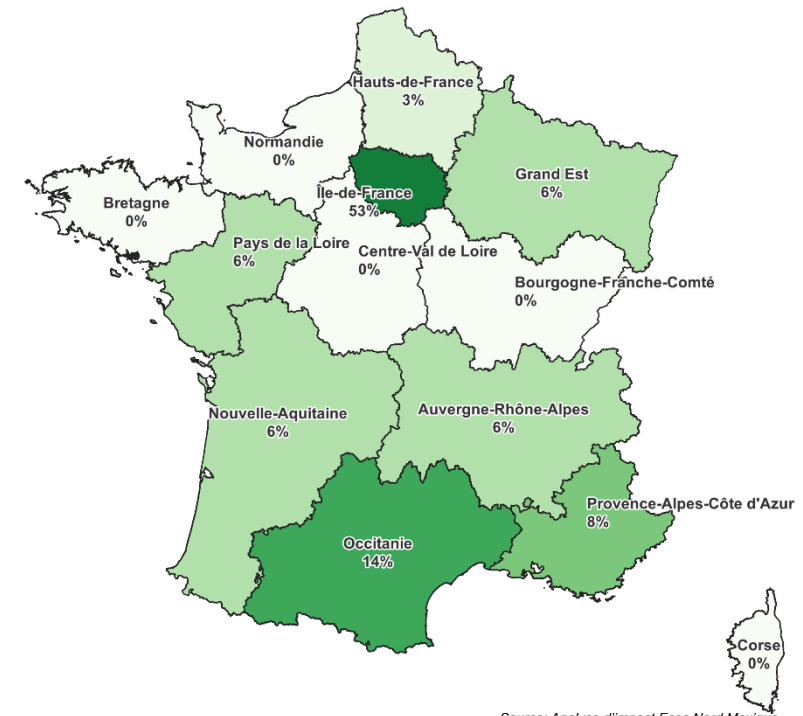
REGIONAL DISTRIBUTION OF SELECTED PROJECTS 2006-2022

Program ECOS NORD MEXICO Regional percentages of applications and selections *Biology and Health 2006-2022*



Source: Analyse d'impact Ecos Nord Mexique
KSTOITSEVA

% of applications



Source: Analyse d'impact Ecos Nord Mexique
KSTOITSEVA

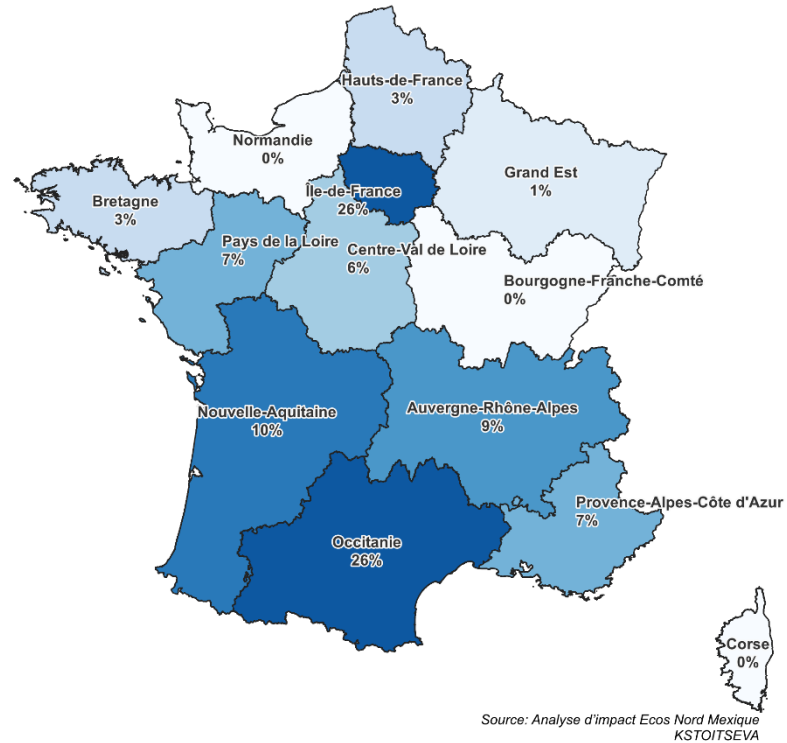
% of selections

Ile-de-France is ahead both for applications and selections

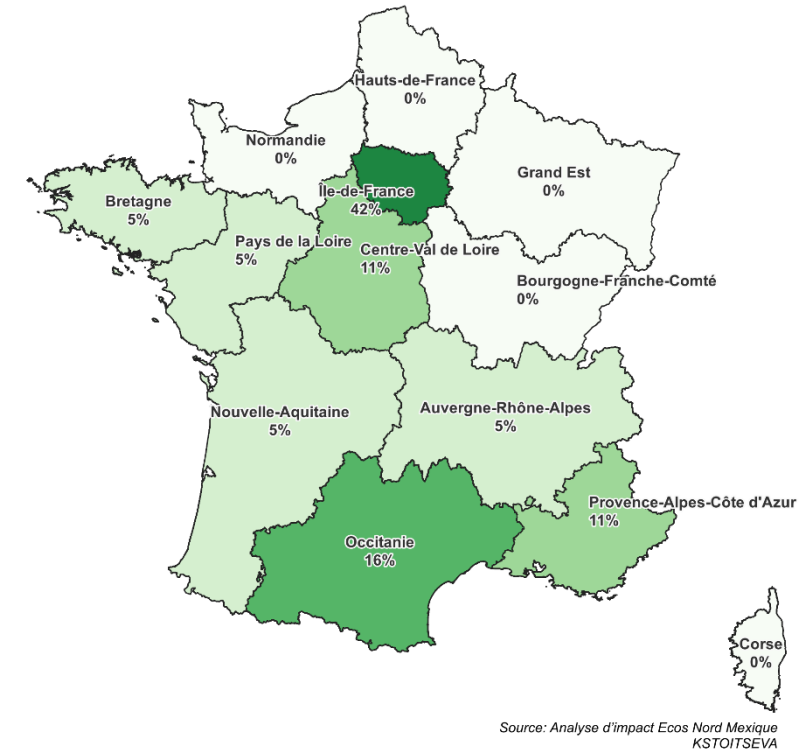
% OF REGIONAL APPLICATIONS/SELECTIONS FOR EACH SCIENTIFIC DOMAIN AS COMPARED TO THE TOTAL NUMBER OF APPLICATIONS/SELECTIONS IN THE SCIENTIFIC DOMAIN

REGIONAL DISTRIBUTION OF SELECTED PROJECTS 2006-2022

Program ECOS NORD MEXICO Regional percentages of applications and selections *Humanities, Social Sciences 2006-2022*



% of applications



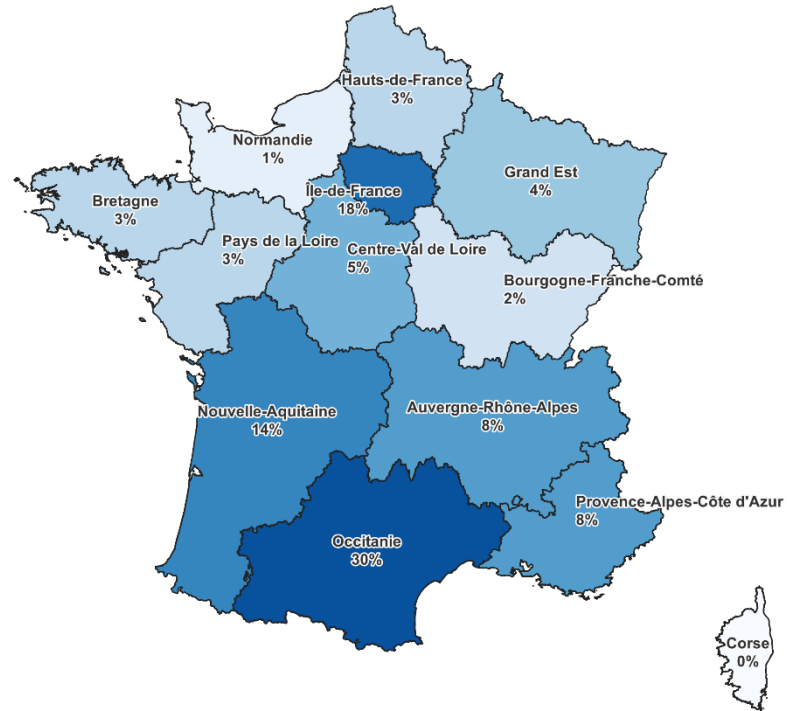
% of selections

Ile-de-France and Occitanie are ahead both for applications and selections but Ile-de-France is largely ahead for selections

% OF REGIONAL APPLICATIONS/SELECTIONS FOR EACH SCIENTIFIC DOMAIN AS COMPARED TO THE TOTAL NUMBER OF APPLICATIONS/SELECTIONS IN THE SCIENTIFIC DOMAIN

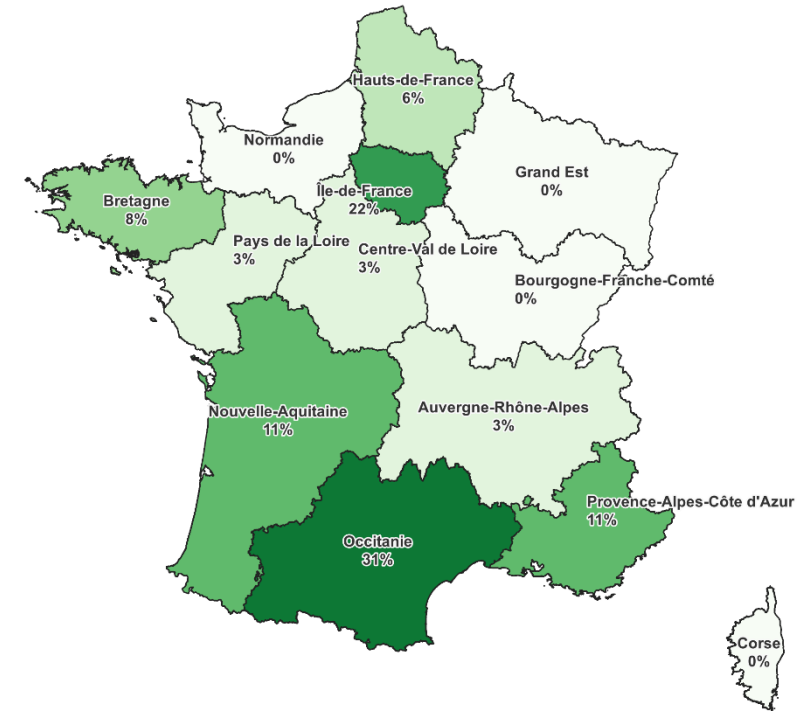
REGIONAL DISTRIBUTION OF SELECTED PROJECTS 2006-2022

Program ECOS NORD MEXICO Regional percentages of applications and selections *Agronomy/Food Science/ Environment/Biodiversity* 2006-2022



% of applications

Source: Analyse d'impact Ecos Nord Mexique KSTOITSEVA



% of selections

Source: Analyse d'impact Ecos Nord Mexique KSTOITSEVA

Almost all regions are concerned : Occitanie is the main contributor followed by Ile-de-France

**% OF REGIONAL APPLICATIONS/SELECTIONS FOR EACH SCIENTIFIC DOMAIN AS COMPARED TO
 THE TOTAL NUMBER OF APPLICATIONS/SELECTIONS IN THE SCIENTIFIC DOMAIN**