

FRANCE – SINGAPORE

**Scientific impact of the programme MERLION
(2006-2019)**

MESRI-DAEI / MEAE

2020

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

GENERAL PRESENTATION OF THE PROGRAMME

Creation : 2006

The purpose of this programme is to develop excellence scientific and technological exchanges between the French and Singaporean laboratories, by promoting new scientific collaborations and integrating in the projects young researchers and PhD students.

Total budget (France + Singapore) : around 154 000 € / year

>> including budget from the French part : around 77 000 € / year

>> including budget from the Singaporean part : around 77 000 € / year

Average budget per project (France + Singapore) : around 7 000 € / year

Number of new funded projects per year : around 16

From 2009-2019 :

704 applications submitted

174 projects funded

DATA SOURCES

French Embassy (2006-2019)

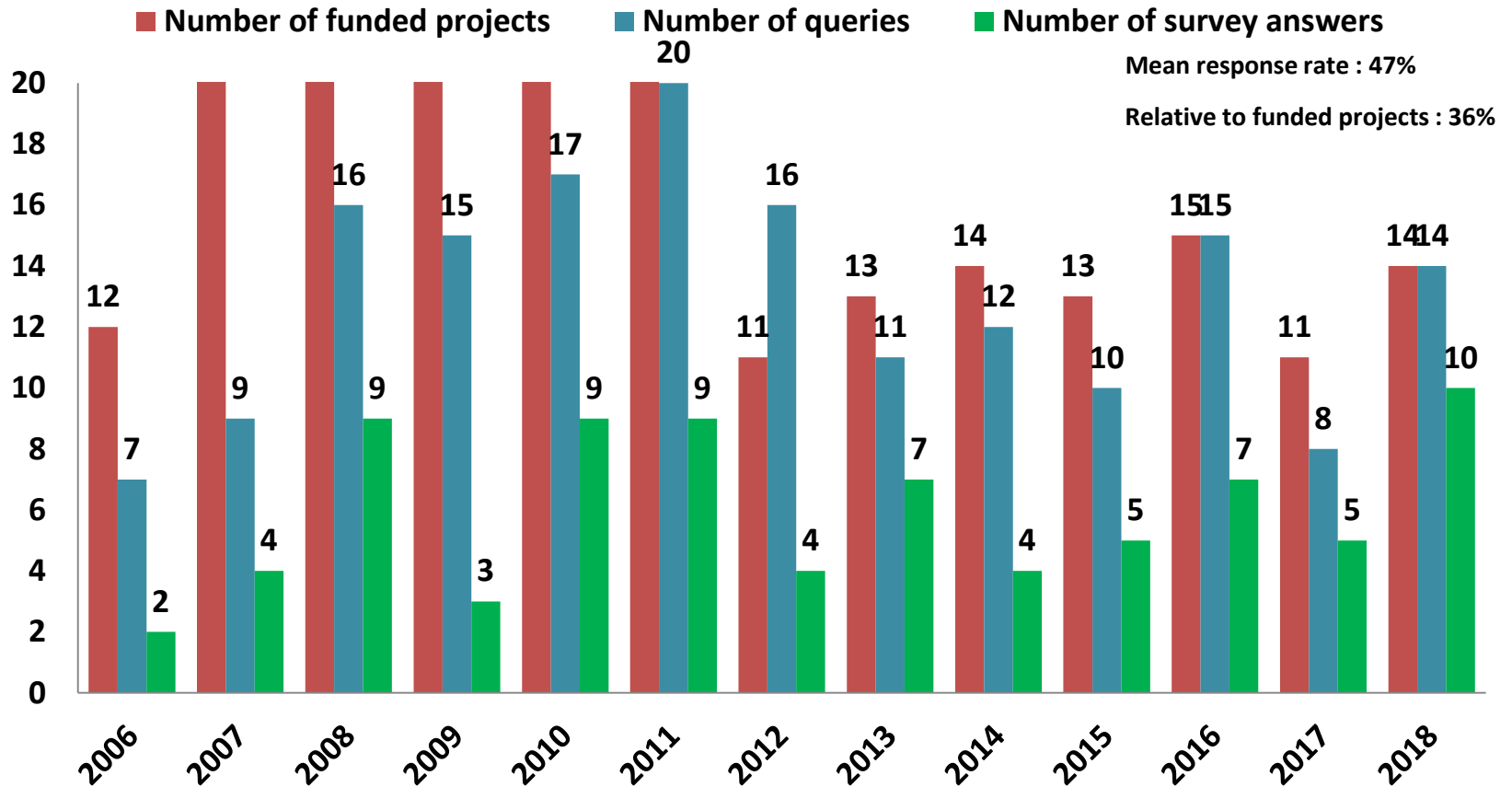
- Information about the PHC Merlion applications

Survey (2006-2018)

- Target : French Principal Investigators of selected projects between 2006 and 2018
- Survey duration : 13 weeks between June and September 2020
- **47%** response ratio (78 respondents for 165 queries)

ANSWERS TO THE SURVEY

Average response rate to the survey : **47 % (78 answers)**



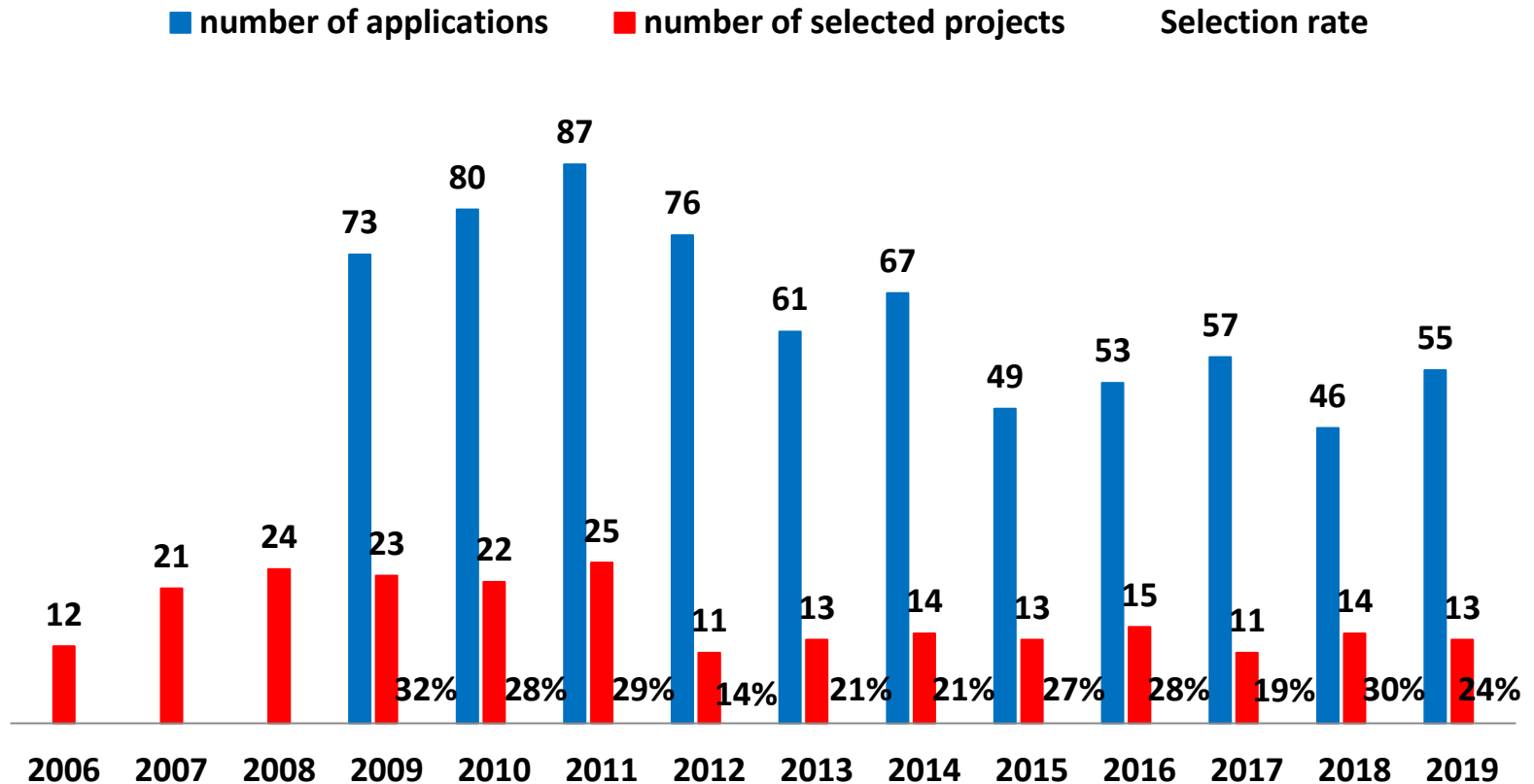
218 funded projects between 2006 and 2018, 165 valid email addresses

2006-2019

Key Points

NUMBER OF APPLICATIONS AND SELECTION RATE

Average selection rate from 2006-2019: **25%**

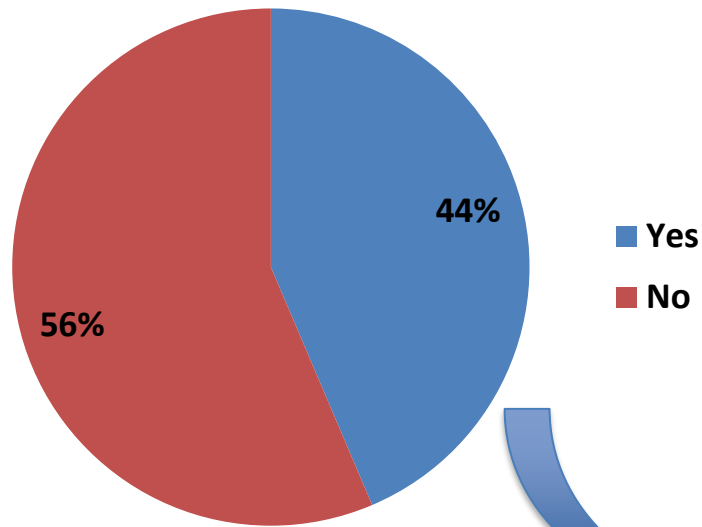


The number of applications is quite stable since 2013

The number of applications for 2006 to 2008 is not available

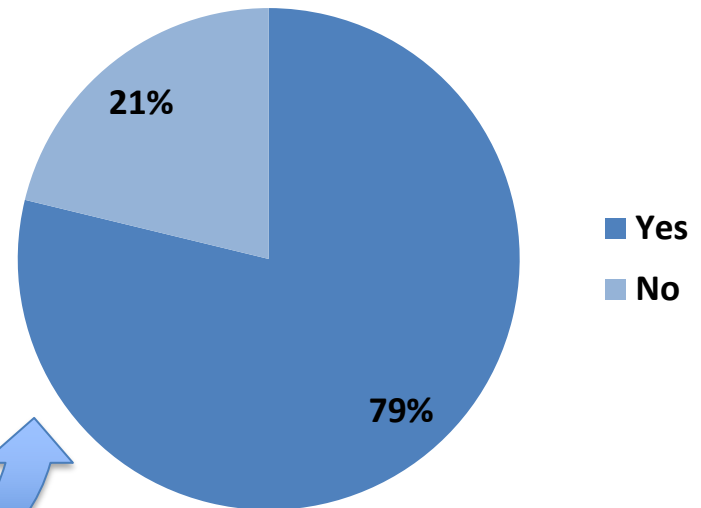
BEFORE THE MERLION PROJECT (1/2)

Did you already cooperate with Singapore in the past ?



Data from 78 responses

If yes, was it with the same partner?



Data from 33 responses

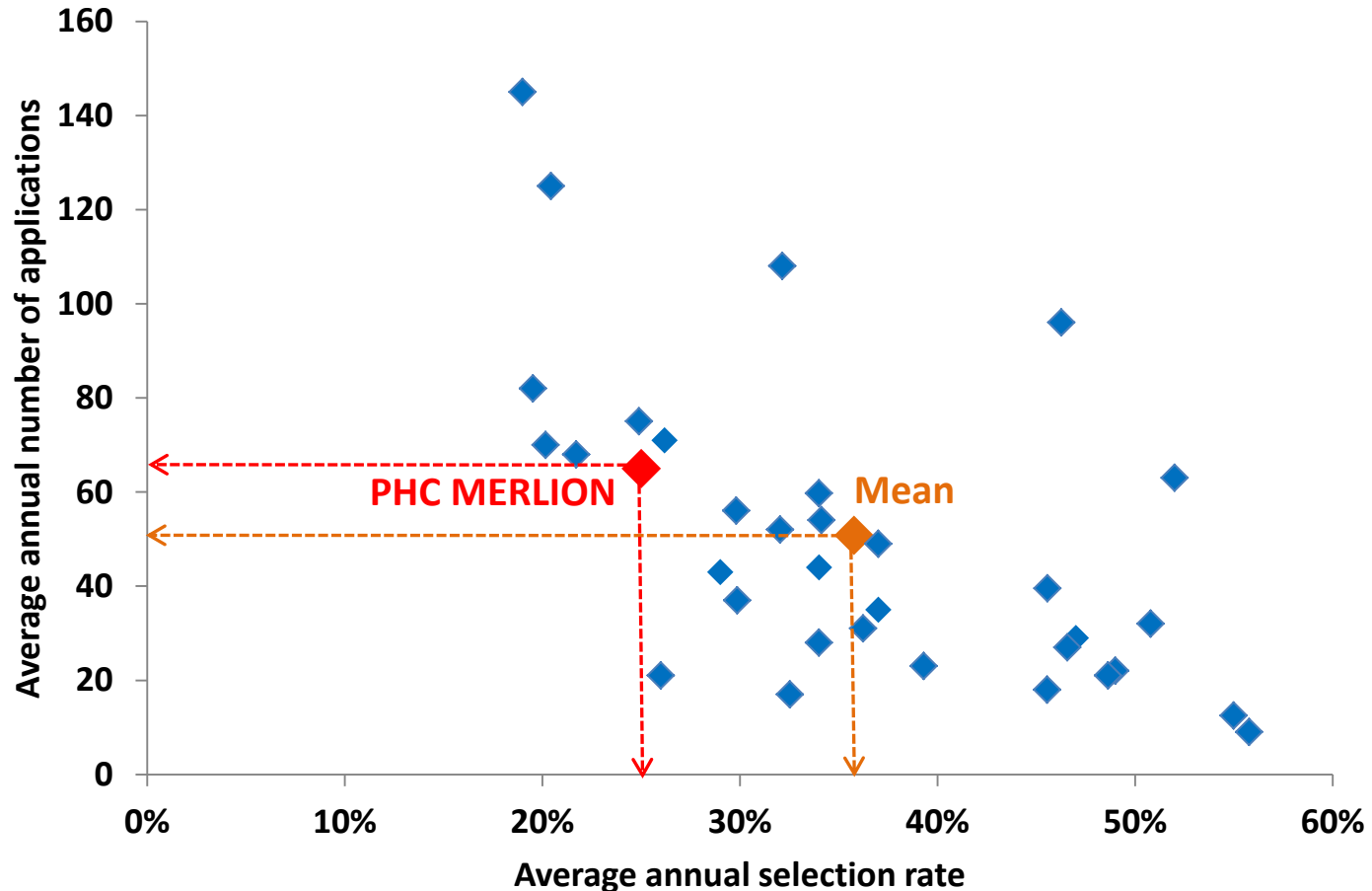
BEFORE THE MERLION PROJECT (2/2)

With which scientific collaboration programme ?	
PHC Merlion	40%
CNRS fundings	20%
Co-funding with singaporean institutions	16%
European programmes	8%
Others	16%

Plus 38 previous cooperations based on other exchanges (co-publication, meetings, joint PhD...)

Data from 25 responses

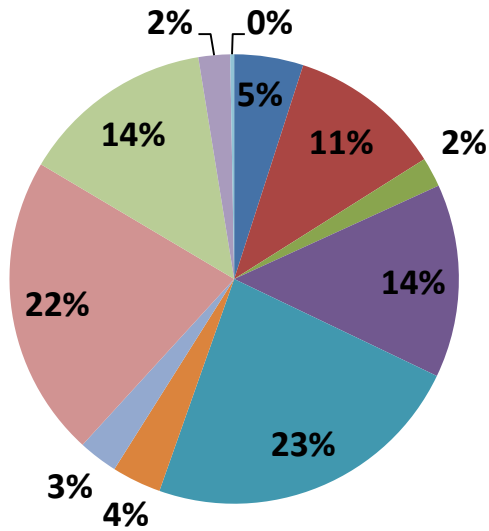
NUMBER OF APPLICATIONS VS SELECTION RATE (COMPARISON BETWEEN 34 DIFFERENT BILATERAL PROGRAMMES)



Average selection rate for 2006-2019 : 25% vs 36% mean
Average number of applications 2006-2019 : 65 vs 51 mean

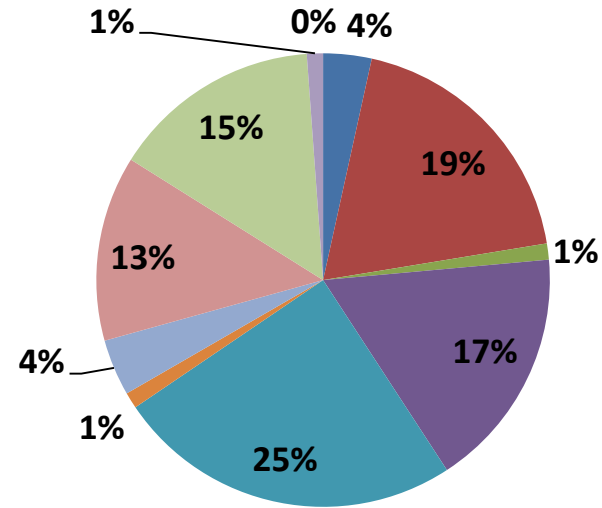
SCIENTIFIC DOMAINS OF PROJECTS 2006-2019

Number of applications : **704**

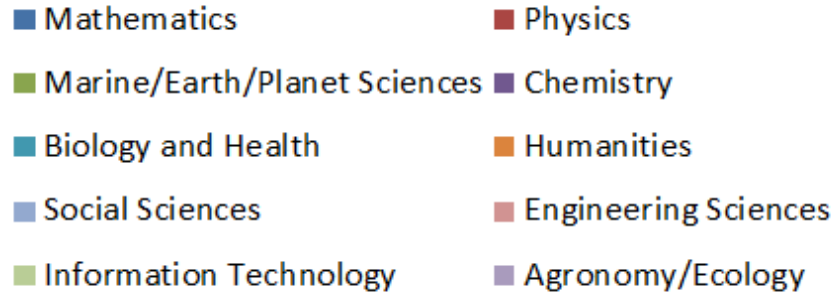


2 dossiers "Multidisciplinaire"

Number of funded projects : **174**

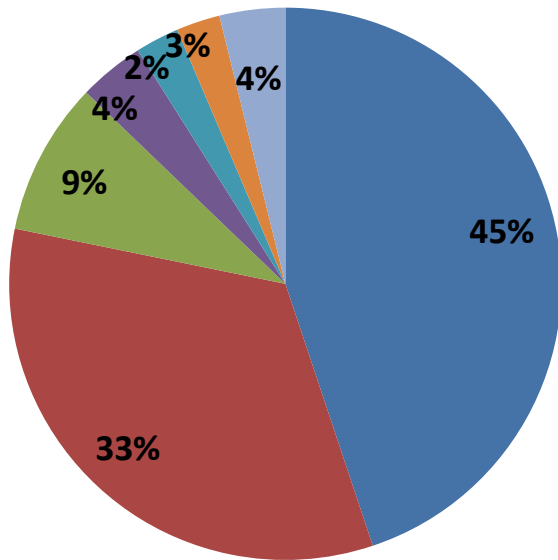


0 dossier "Multidisciplinaire"



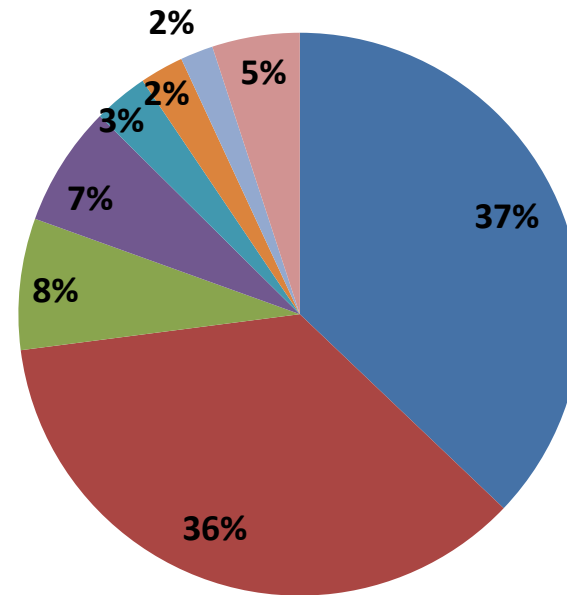
FRENCH PARTICIPATING INSTITUTIONS 2006-2018

PI's employers



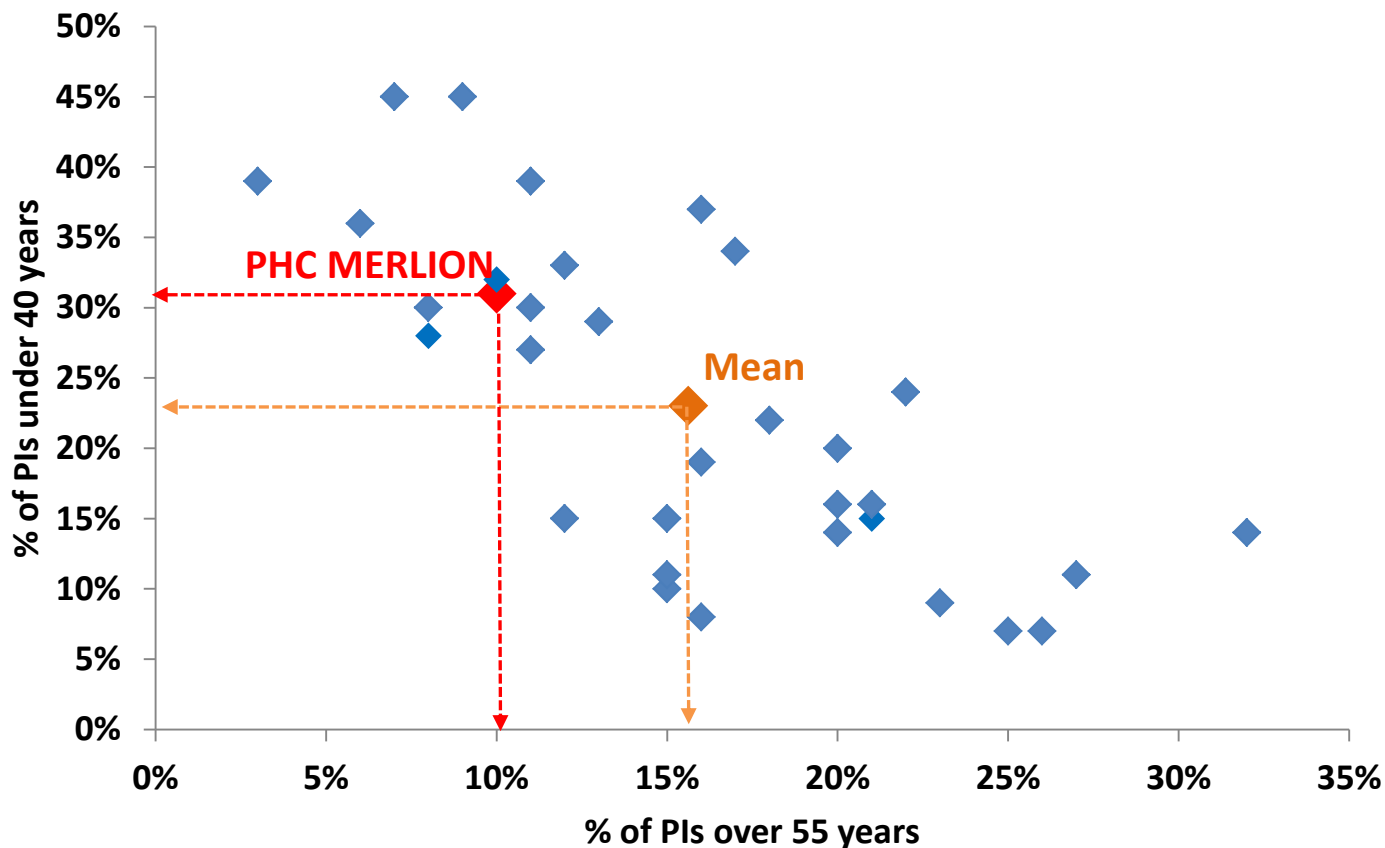
- University
- CNRS
- INSERM
- CEA
- Engeneering school
- Pasteur Institute
- Other

Laboratories authorities



- University
- CNRS
- Engeneering school
- INSERM
- ENS
- Pasteur Institute
- CEA
- Other

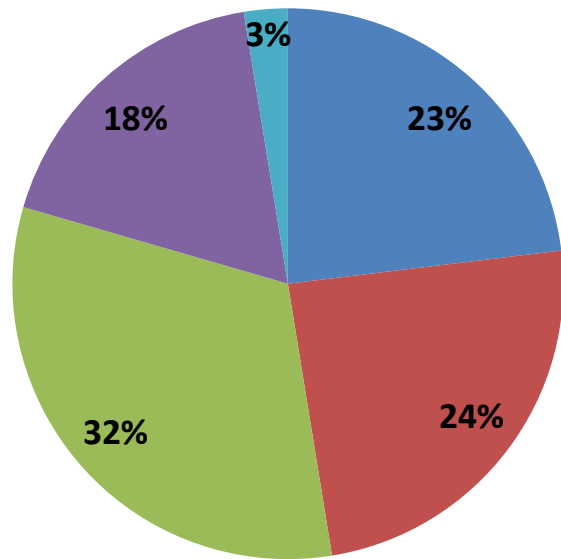
AGE OF PRINCIPAL INVESTIGATORS (PI) (COMPARISON BETWEEN 34 DIFFERENT BILATERAL PROGRAMMES)



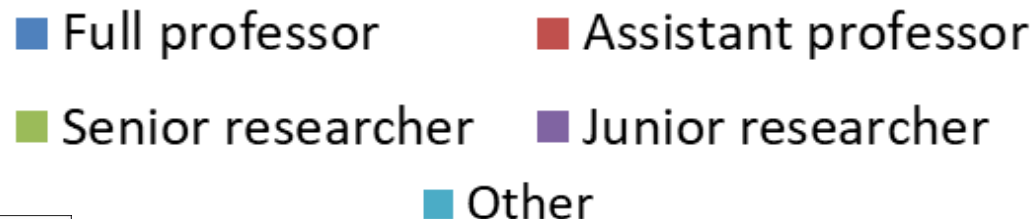
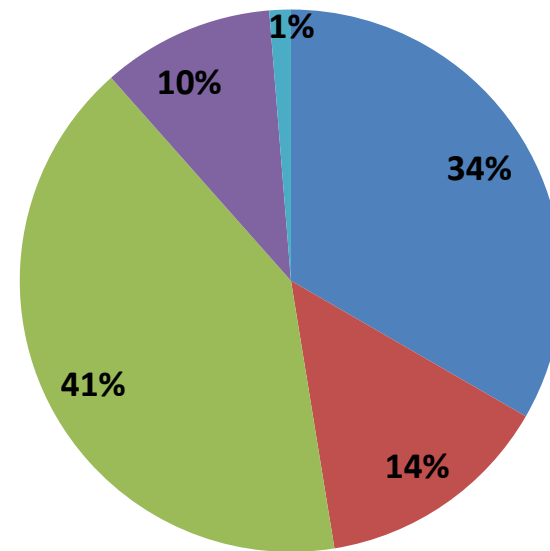
PIs under 40 years : 31% vs 23% mean
PIs over 55 years : 10% vs 16% mean
59% of the PIs are between 40 and 55 years

FRENCH PIS (PRINCIPAL INVESTIGATORS) : STATUS

**Previous professional status
(at the beginning of the project)**

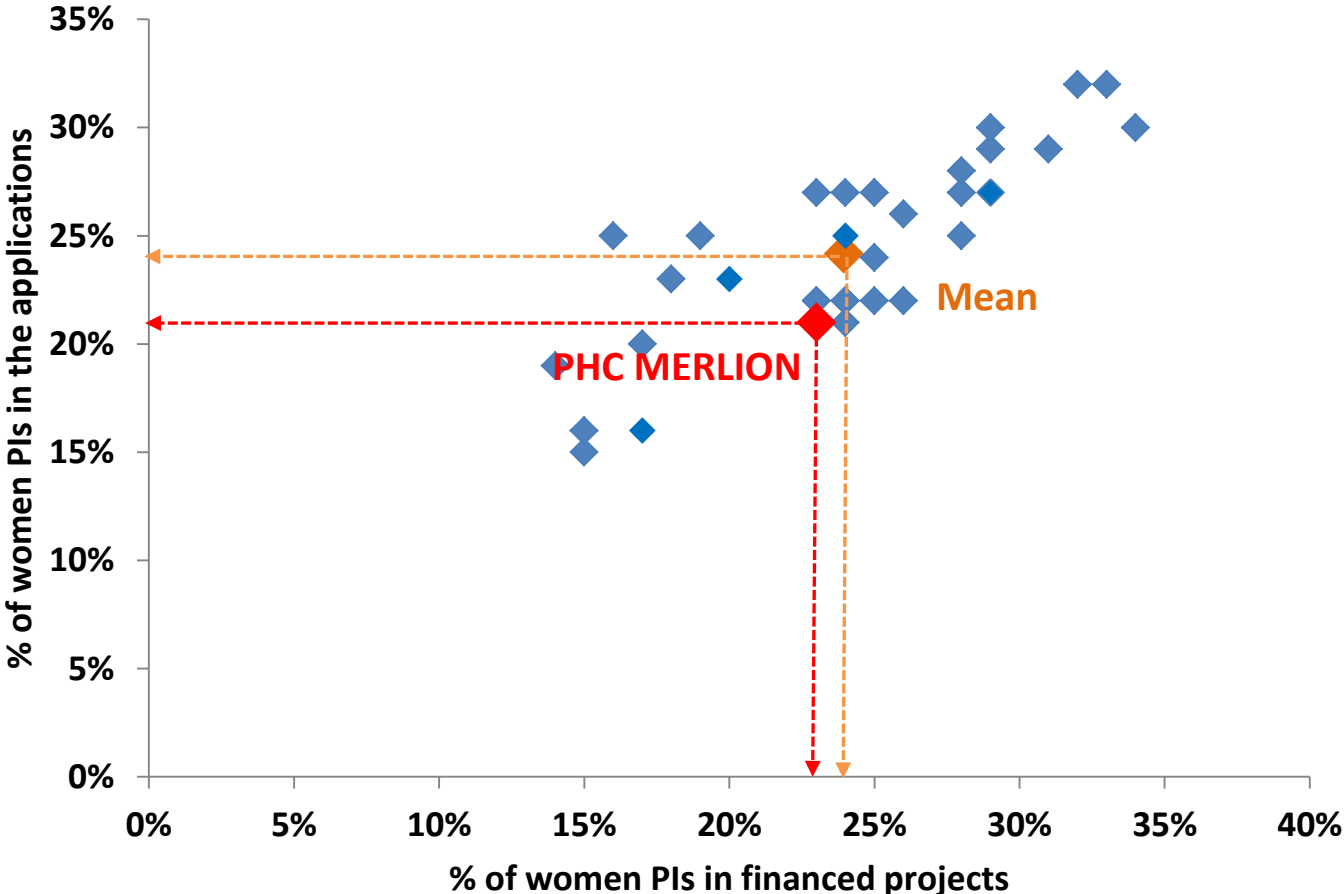


Current professional status



IMPLICATION OF WOMEN (FRANCE)

(COMPARISON BETWEEN 34 DIFFERENT BILATERAL PROGRAMMES)

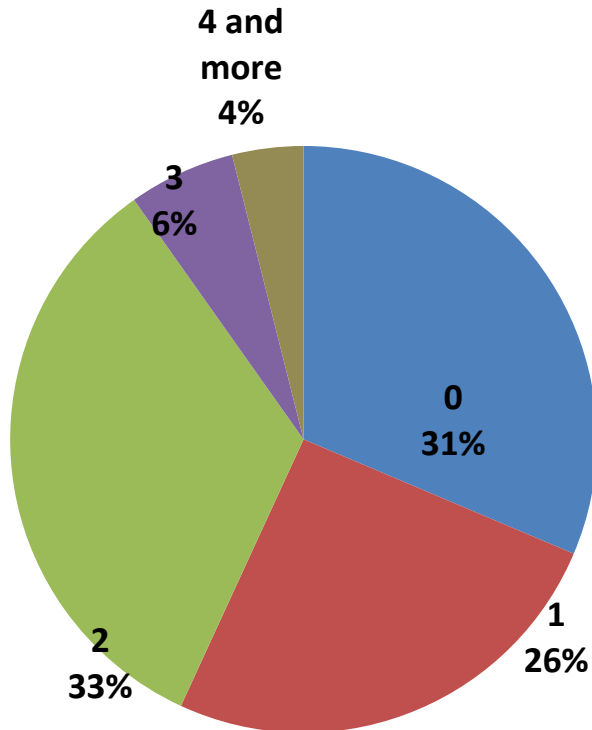


% of women PIs in the applications : 21% vs 24% mean
% of women PIs in the selected projects : 23% vs 24% mean



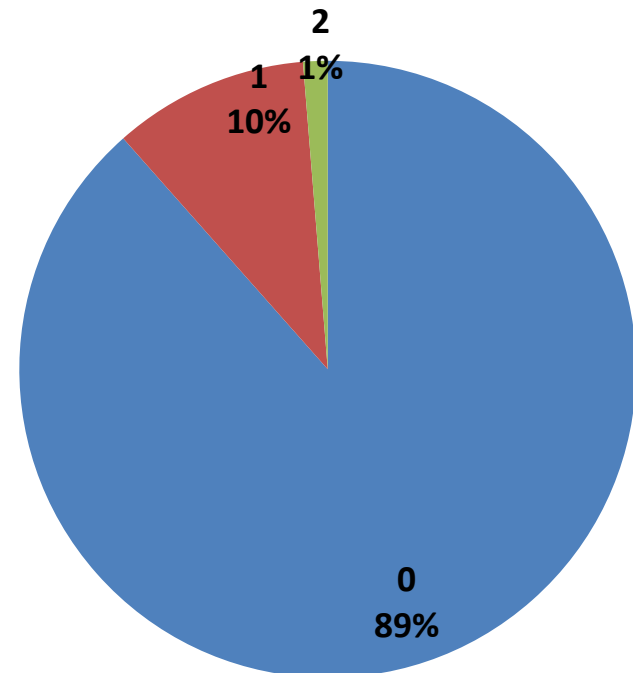
PARTICIPATION OF FRENCH YOUNG RESEARCHERS

Number of PhD students



59% of projects involve at least one PhD student

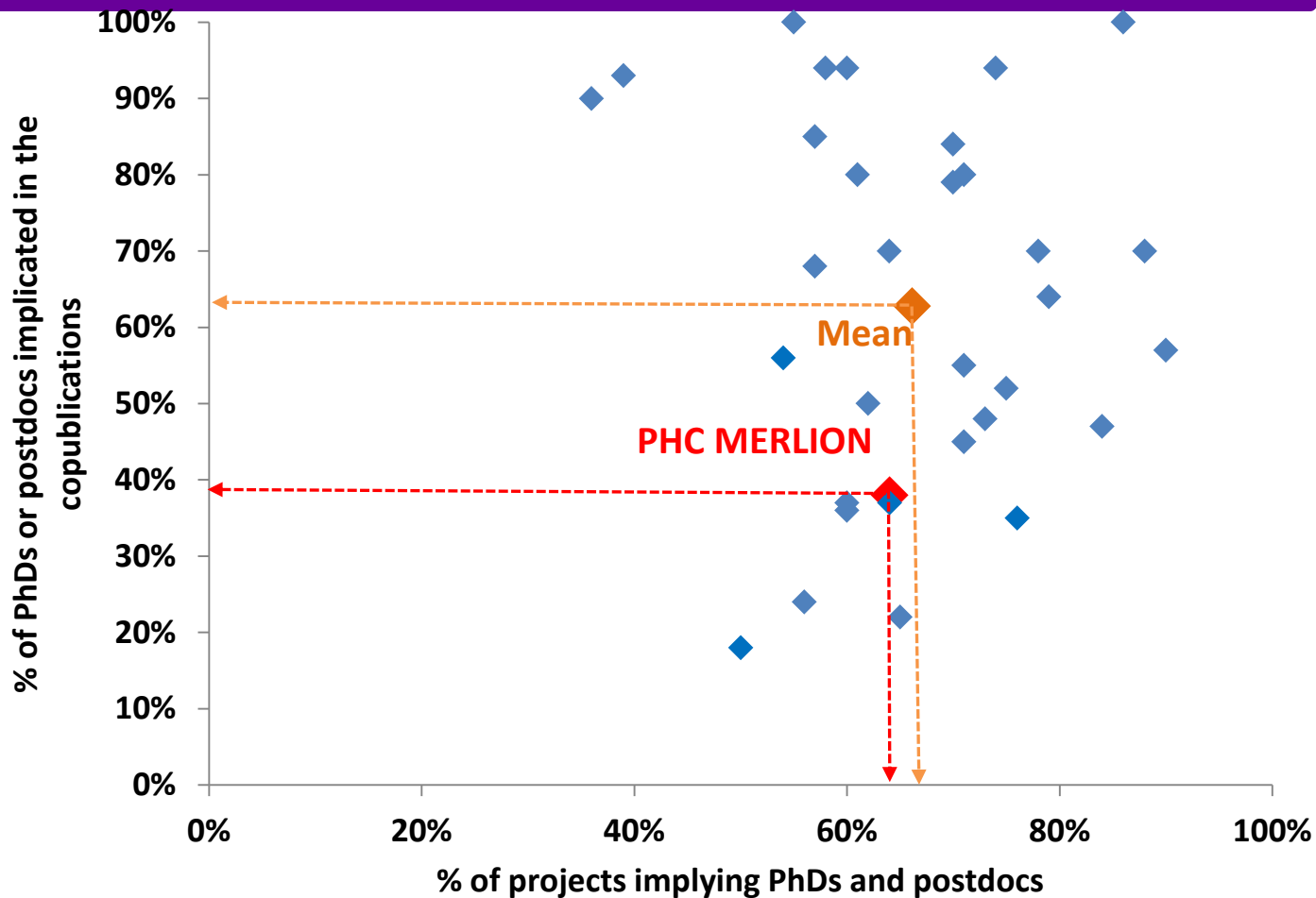
Number of post-doctoral researchers



19% of projects involve at least one post-doctoral researcher

Data from 76 responses

IMPLICATION OF YOUNG RESEARCHERS (COMPARISON BETWEEN 34 DIFFERENT BILATERAL PROGRAMMES)



% of projects implying young researchers : 64% vs 66% mean

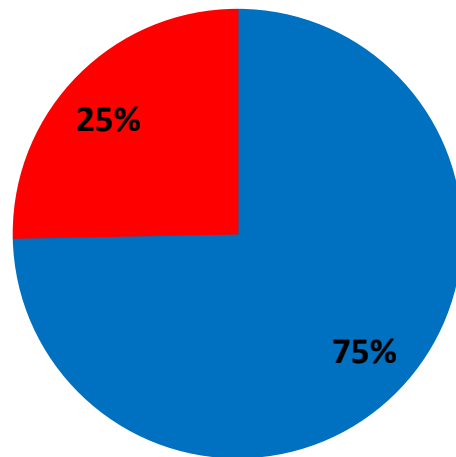
% of PhD or postdoc implicated in the copublications : 38% vs 63% mean



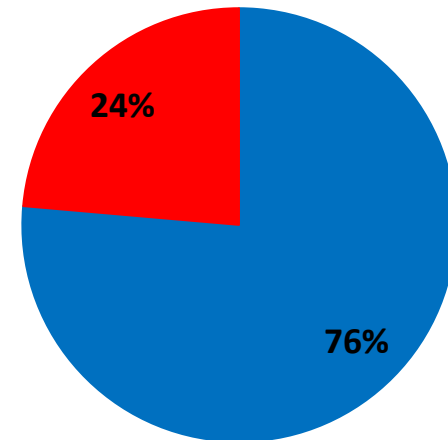
MOBILITY

MOBILITY : GENDER DISTRIBUTION

France → Singapore



Singapore → France

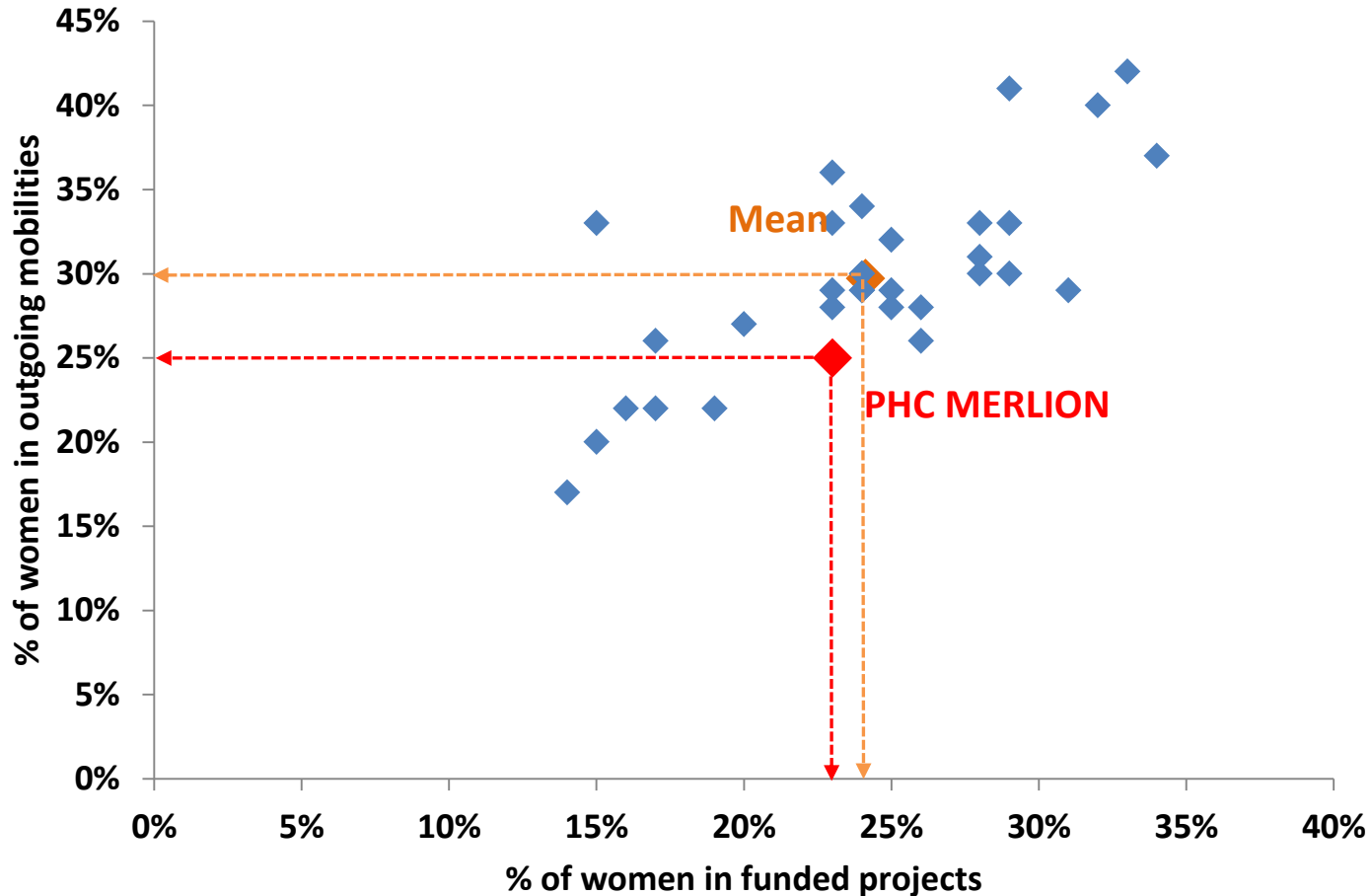


■ Men ■ Women

Data from 69 funded projects including outgoing mobilities and 63 funded projects including incoming mobilities

WOMEN MOBILITY FRANCE – SINGAPORE

(COMPARISON BETWEEN 34 DIFFERENT BILATERAL PROGRAMMES)



% of women researchers in the selected projects : 23% vs 24% mean
% of women researchers in outgoing mobilities : 25% vs 30% mean

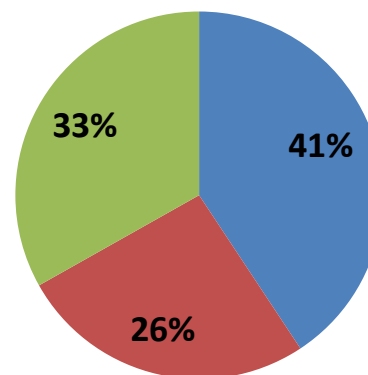
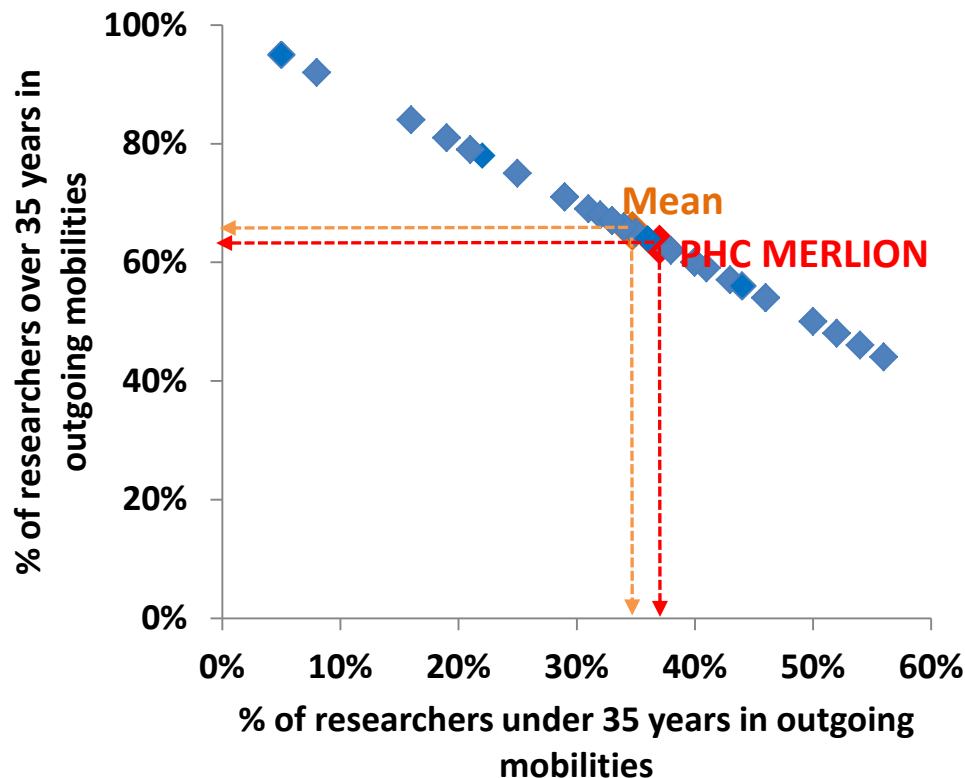
YOUNG RESEARCHERS MOBILITY

FRANCE – SINGAPORE

(COMPARISON BETWEEN 34 DIFFERENT BILATERAL PROGRAMMES)

France → Singapore

Singapore → France



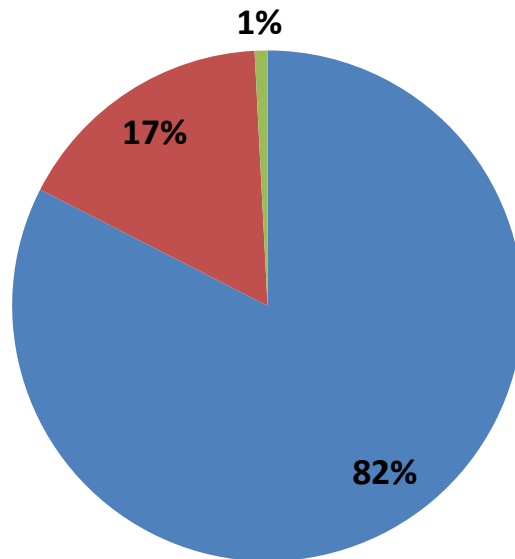
- carried out by PhD students (<28 years old)
- carried out by post-doctoral researchers (28<=age<=35 years old)
- carried out by permanent researchers (>35 years old)

% of french young researchers in outgoing mobilities : **37% vs 35% mean**

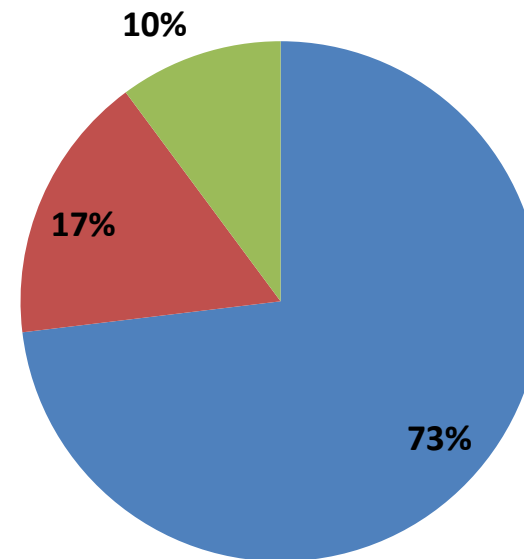
% of singaporean young researchers in incoming mobilities : **67%**

MOBILITY : DURATION

France → Singapore



Singapore → France



■ < 15 days

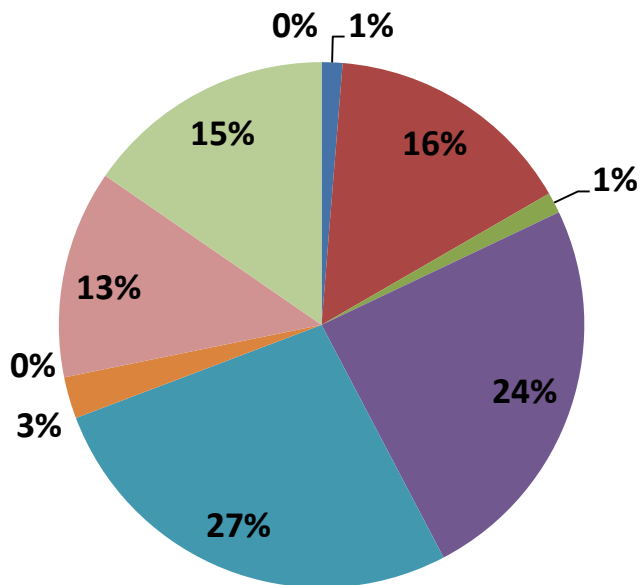
■ between 15 days and 3 months

■ > 3 months

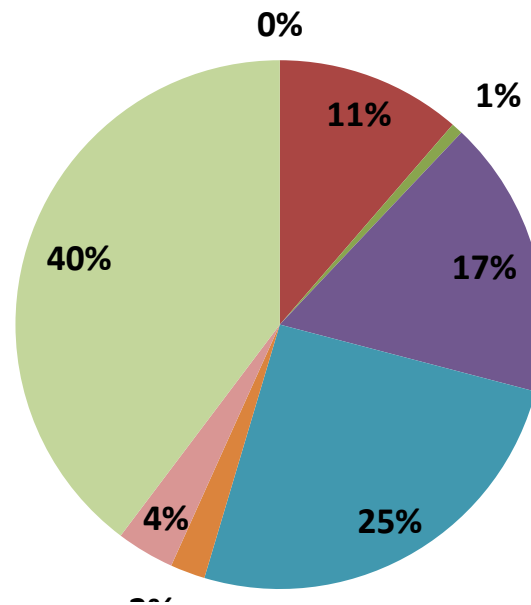
SCIENTIFIC PRODUCTION

SCIENTIFIC OUTPUT (1/2)

Funded projects 2006-2017



Percentage of copublications



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

SCIENTIFIC OUTPUT (2/2)

Data from 78 funded projects

	Number of financed projects in the survey	Average number of co-publications per project
Mathematics	1	0
Physics	12	1,3
Marine/Earth/Planet Sciences	1	1
Chemistry	19	1,3
Biology and Health	21	1,7
Humanities	2	1,5
Social Sciences	0	
Engineering Sciences	10	0,5
Information Technology	12	4,7
Agronomy / Ecology	0	
TOTAL	78	

Overall average **annual** number of copublications per project : **0,90 vs 0,93 mean**

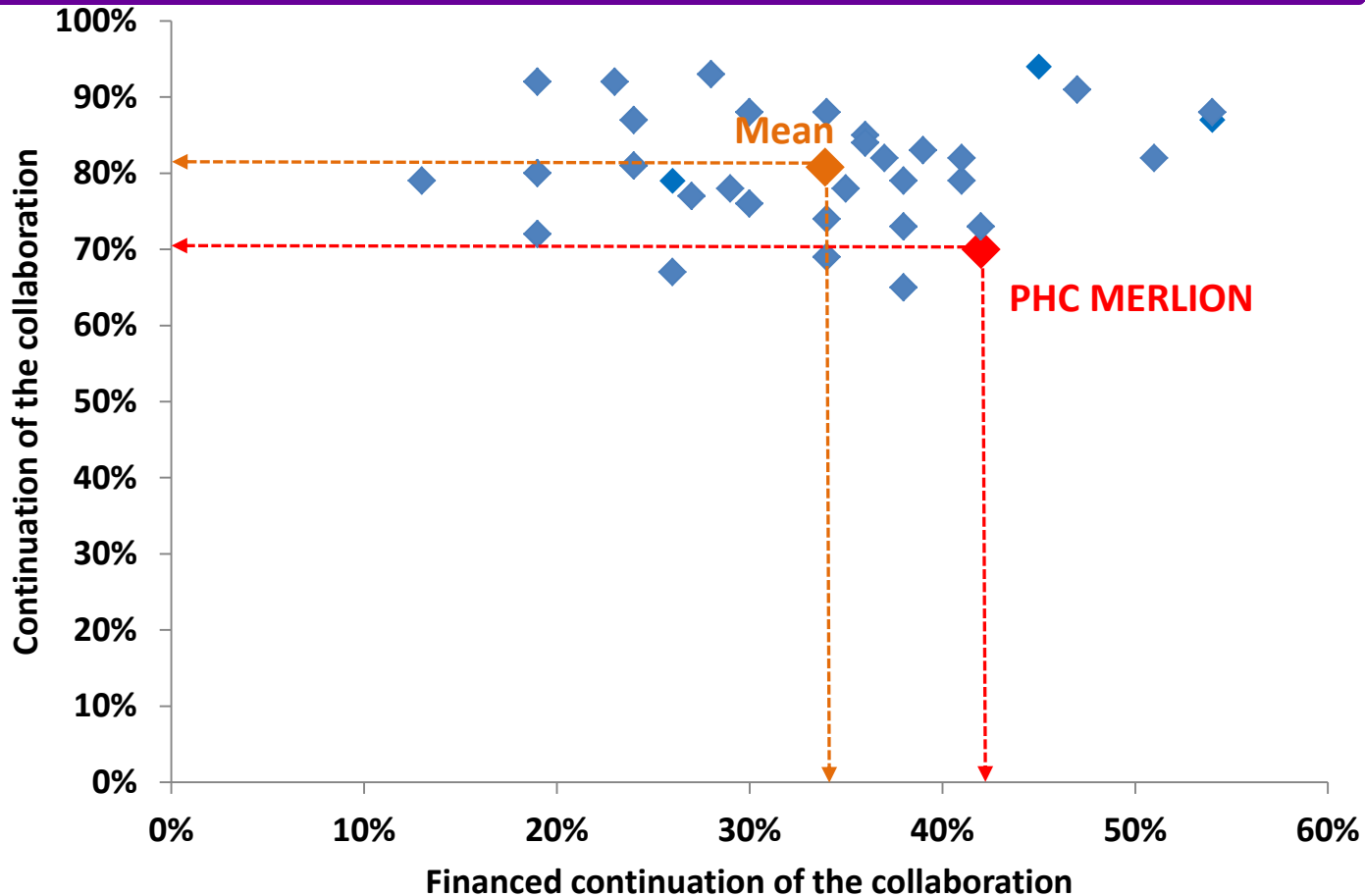
58% of funded projects led to one co-publication at least

31% of copublications include at least 1 PhD or PostDoc

The average annual rate of publication for young researchers involved in the projects is **0,31**

WHAT HAPPENS AFTER A MERLION PROJECT ?

CONTINUATION OF THE COLLABORATION (1/5) (COMPARISON BETWEEN 34 DIFFERENT BILATERAL PROGRAMMES)



Continuation of the collaboration : 70% vs 81% mean

Continuation of the collaboration with other sources of subvention : 42% vs 34% mean

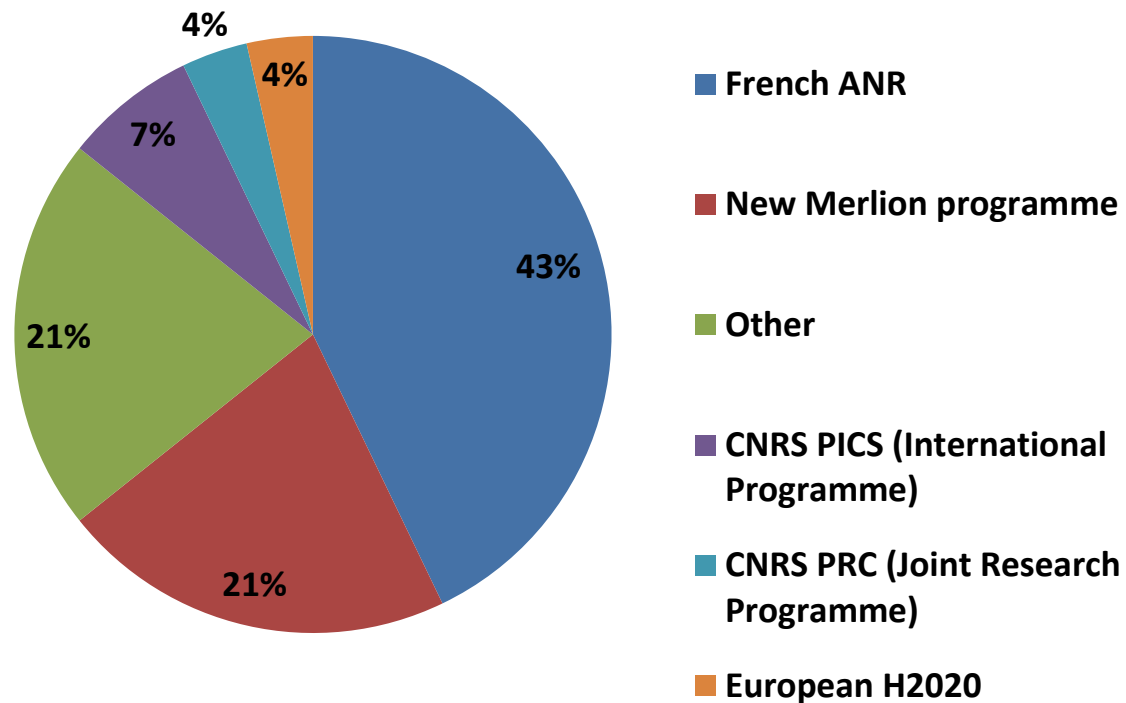
CONTINUATION OF THE COLLABORATION (2/5)

70% of the collaborations continued after the Merlion project

Which activities?	
Collaborative research	64%
Co-publications	64%
Researchers mobility	49%
Joint participation to conferences	30%
PhD mobility	25%
Co-organisation of scientific events	21%
Joint participation to PhD thesis	21%
Others	11%
Joint diplomas (Master, PhD...)	0%

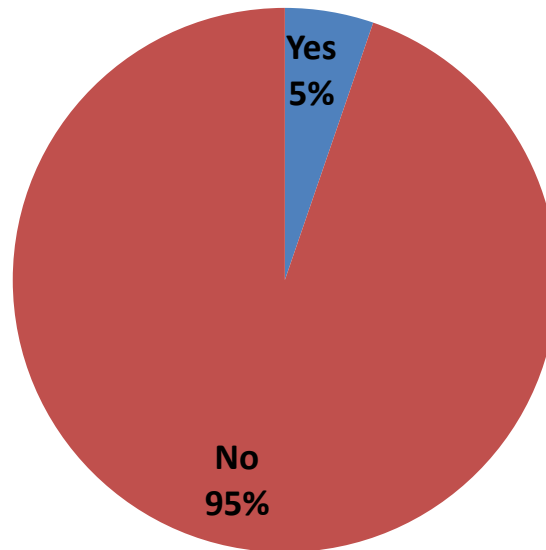
CONTINUATION OF THE COLLABORATION (3/5)

What kind of funded collaborations after the Merlion project ?



CONTINUATION OF THE COLLABORATION (4/5)

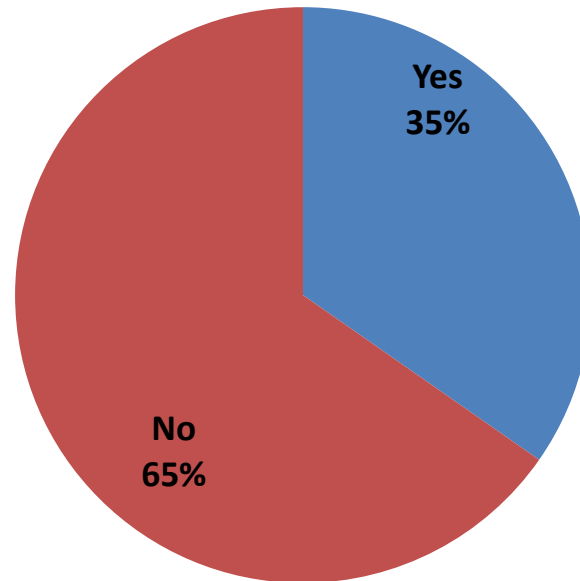
Has the Merlion project led to the set-up of joint structures?



2 CNRS International Laboratories (LIA)
2 CNRS International Units (UMI)

CONTINUATION OF THE COLLABORATION (5/5)

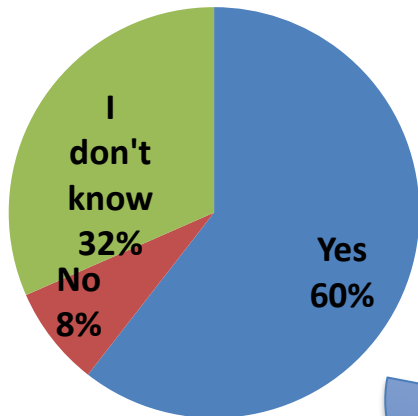
Has the French-Singaporean collaboration involved new partners?



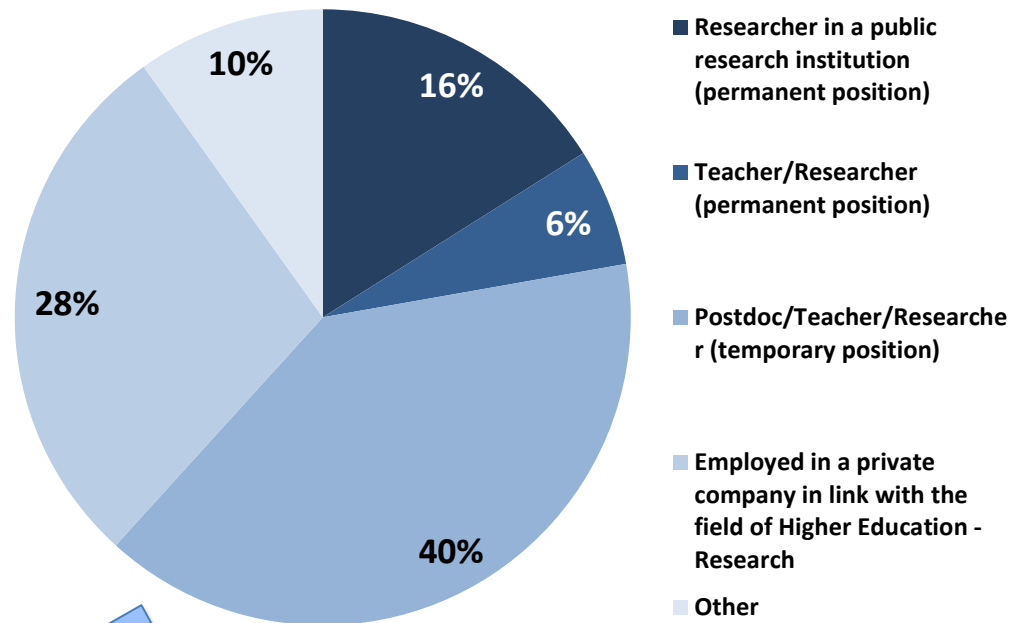
For a total of 22 new partners from 10 different countries

IMPACT ON YOUNG RESEARCHERS' CAREER (1/2)

Was young researchers' career impacted by the Merlion programme ?



Type of impacts

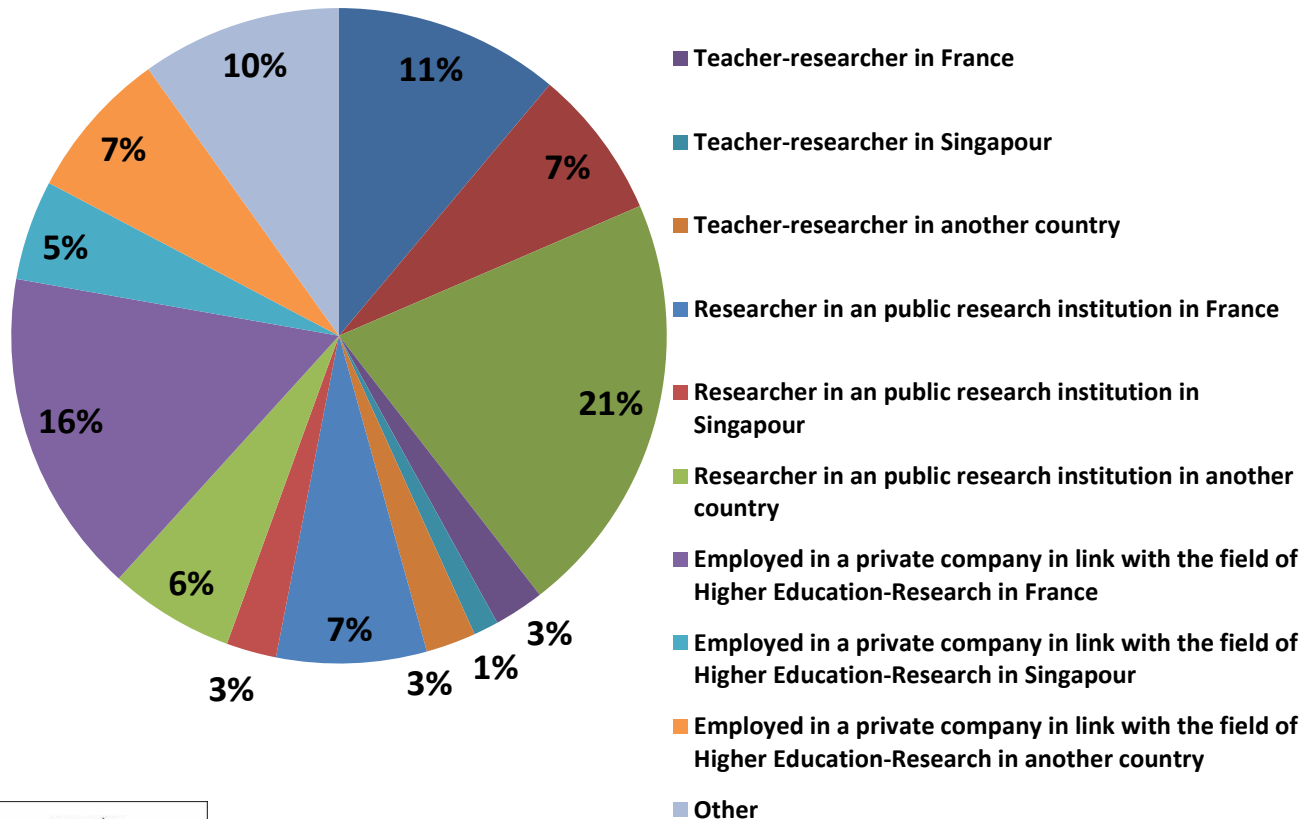


Data from 76 responses

Data from 46 positive responses for a total of 81 young researchers

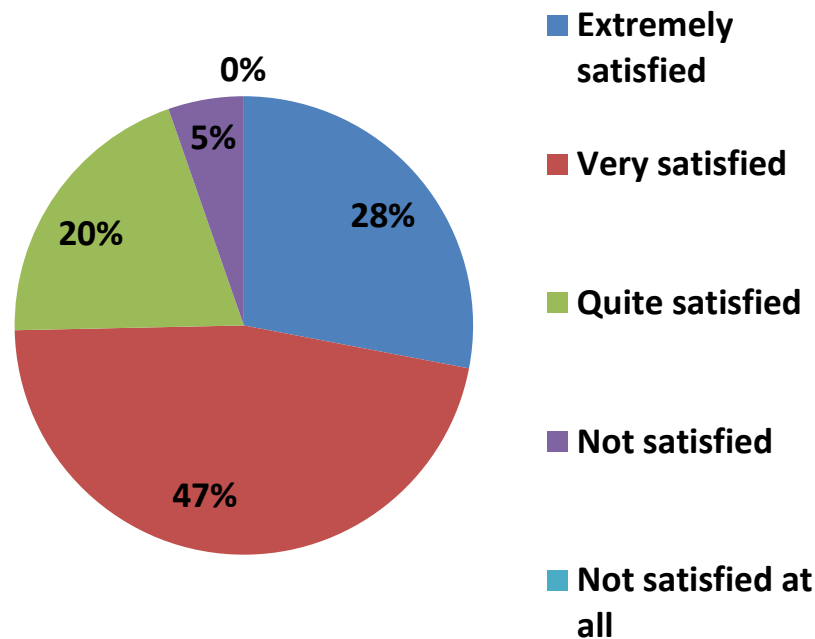
IMPACT ON YOUNG RESEARCHERS' CAREER (2/2)

Detailed types of impacts



GENERAL OPINION OF FRENCH PIS ON THE PROGRAMME

95% of French principal investigators are satisfied



Data from 75 responses

GENERAL OPINION OF FRENCH PIS ON THE PROGRAMME (2/3) POSITIVE COMMENTS

SURVEY OF 78 FUNDED PROJECTS



Strengths of this program	Number of occurrences (out of 466)	% (out of 78)
Allows the mobility of the researchers	68	87%
Allows an international scientific collaboration	64	82%
Simplicity of the application process	51	65%
Allows exchanges which allow a scientific production	44	56%
Allows the training of the young researchers	37	47%
Allows a knowledge of the country partner	33	42%
Financial means sufficient for the expenditure of mobility	32	41%
Easy implementation (administrative flexibility)	27	35%
Is used as starting for raising other funds	25	32%
Financial autonomy towards your institution	22	28%
Good scientific appreciation compared to the financial investment	21	27%
Duration of mobilities adapted to the needs	12	22%
Sufficiently long duration of the projects	10	13%
Timetable for implementation	9	12%
Transparency of the methods for selecting the projects	5	6%
Others	1	1%
No strenght point	0	0%
<i>Total number of occurrences</i>	<i>466</i>	

GENERAL OPINION OF FRENCH PIS ON THE PROGRAMME (3/3) NEGATIVE COMMENTS

SURVEY OF 78 FUNDED PROJECTS



Weaknesses of this program	Number of occurrences (out of 192)	% (out of 78)
No funding of the operation and capital expenditures	35	45%
Difficult perpetuation of collaboration	23	29%
Too short duration of the projects	23	29%
No weakness	13	17%
Financial means insufficient for the expenditure of mobility (per diem)	13	17%
Too short duration of mobilities	13	17%
Lack of transparency on the methods of projects selection	11	14%
Insufficient communication on the evaluation's results	10	13%
Financial means insufficient for the expenditure of mobility (transport)	10	13%
Administrative heaviness of the missions management	9	12%
Other	9	12%
Too low number of mobilities	5	6%
Timetable for implementation	5	6%
Heaviness of the process of applications	4	5%
Flexibility of the programme for actions co-financed with the partner	4	5%
Financial autonomy towards your institution	4	5%
Too long duration of mobilities	1	1%
Total number of occurrences	192	

PRELIMINARY CONCLUSIONS

Preliminary conclusions suggest that the funding scheme has efficiently contributed to create (or to maintain) fruitful and long-term cooperation, despite the relatively low financial support, which is to be considered as “seed money”.

Good attractivity of the programme (55 applications in 2019)

Quite high percentage of young PIs (31%) as compared to the mean of 23%

Participation of women PIs close to the the mean but could be encouraged

High implication of singaporean young researchers in incoming mobilities (67%)

Scientific production close to the mean (0,90 vs 0,93)

High percentage of new fundings after a Merlion project (42% vs 34% mean)

Merlion programme initiates only 56% of new collaborations. It should be improved

42% of funded projects with no co-publications

Insufficient implication of french young researchers in the scientific production (38% vs general mean 63%)

Only 31% of co-publications include at least one young researcher

Low average annual publication rate of young researchers (0,31)

Quite low implication of both PhDs (59% vs general mean : 65%) and postdocs (19% vs general mean : 23%)

PRELIMINARY RECOMMENDATIONS

RECOMMENDATIONS

- Promote more new cooperations
- Increase the publication rate
- Increase the participation of young researchers in the projects
- Encourage PIs to increase the implication of young researchers in the publications
- Encourage women researchers to apply
- Consider a “MERLION +” programme to help PIs at the end of their financing to develop new applications ?

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

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Thank you for your attention