

Building sustainable partnerships

CHARTING THE FUTURE

INDO FRENCH SCIENCE AND TECHNOLOGY

Our objectives

- Enabling sustainable partnerships between France and India
- Developing collaborative networks
- Increasing the number of joint scientific publications
- Establishing permanent joint platforms for research: laboratories, networks, units

Who we are

Delhi :

Science and Technology
department
CNRS India office

service.scientifique.inde@gmail.com



Mumbai:

Science and Technology
department

frenchscience.mumbai@gmail.com

Bangalore:

Science and Technology
department

frenchscience.bangalore@gmail.com

Our network and tools

- The CEFIPRA, the Indo French ST&I fund
- Bilateral agreements between institutes
- Grants, fellowships and mobility support
- Financed networks, joint labs, mixed units
- The French Research Institutes : CSH Delhi & IFP Pondicherry

The French Research & Innovation landscape

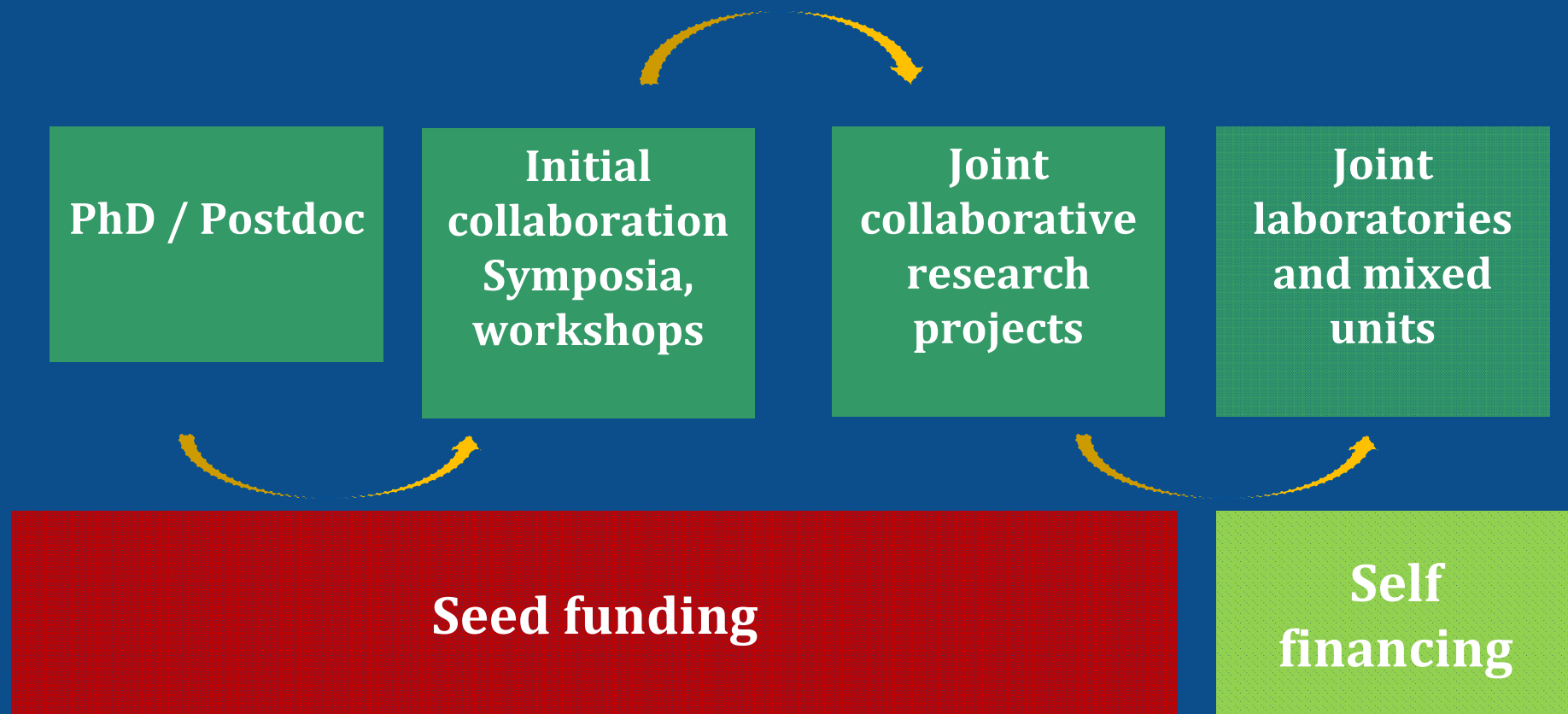
- Five ministries involved:
 - Research, Health, Environment, Industry & Defence
- Main Funding agency
 - French National Research Agency (ANR) budget 900 Millions Euros
- Many dedicated Research Organizations fostering R&I
 - CEA, CNRS, INSERM, INRA, IRD, INRIA, CNES, etc.
- World class Graduate Schools
 - Polytechnique, Ecole Normale, Ecoles des Mines, Centrale, etc.
- Extensive clusters of Universities and Centres of Excellence
- Structures dedicated to PPP & innovation in research
 - Instituts Carnots, Competitiveness clusters, Technology Research Institutes, etc.

The French research landscape

A few numbers

- Research budget: **2.26% GDP** (5th OECD) – 43 Bn €
- **234 200 Scientists** (57% in private companies ; +23% between 2004/2009)
- Sc. publications : **4,1% - 6th (world)** - % but impact is **> world average**
- Domains similar to major countries except mathematics (very high)
- **33 science Nobel laureates** (2005 in Chemistry, 2007 in Physics, 2008 and 2011 in Medicine) – **11 Fields Medals** (Mathematics – 2 in 2010)

The typical development cycle



Success Stories

The typical development cycle

Chemistry (IISc B'lore – CNRS)

- The Indo French Centre for Organic Synthesis: A network of over 30 laboratories since 2000
- 10+ CEFIPRA projects ; 120+ PhD & Post Doc from both countries financed
- 3 joint laboratories: Sustainable Chemistry (IICT Hyd-Rennes), Solid state structural chemistry (CRISMAT-CNRS-IISc) ; Environmental chemistry and catalysis (NCL Pune – CNRS)

Water (IISc-IRD, NGRI-BRGM)

- 11 years of sustained collaborations
- PhD & Post doc support by the French Embassy
- Joint CEFIPRA projects
- 2 joint labs : Water Sciences (IISc-IRD) and Ground water research (NGRI Hyd-BRGM)

Success Stories /2

The typical development cycle

Human Genetics – NIMHANS

- Postdoctoral fellow in Clermont-Ferrand – funded by the French Embassy (2006)
- ICMR – INSERM collaborations and symposia (2008/09)
- Joint CEFIPRA project submitted (2011)

Neurosciences – NBRC – INSERM

- Postdoctoral sandwich scholarship from the Embassy
- Joint CEFIPRA projects
- Indo French Joint Lab in neurosciences - *Protect*

Financing collaborative research

CEFIPRA / IFCPAR

CEFIPRA / IFCPAR

The Indo French ST&I fund

- **Autonomous funding agency** under the joint control of DST and MAE
- Through **the strong pioneering political will** of the French and Indian governments (1987)
- Mandate:
 - Supporting collaborative research projects
 - Organizing seminars and workshops on relevant themes
 - Encouraging PPPs
- HQ in Delhi, 11 staff

CEFIPRA / IFCPAR

Range of activities

- **CEFIPRA Blue Sky**
 - Core activities and experience (advanced scientific research and seminars)
- **CEFIPRA Innovation**
 - Industrial branch dedicated to projects with high potential for innovation and development
- **CEFIPRA Targeted programs**
 - To support cooperation activities of scientific partners and their specific calls for proposals
- **CEFIPRA Support to projects**
 - To support (administration, etc.) joint research structures, Research Chairs, Industrial Chairs, fellowships programs... of various partners

Achievements of CEFIPRA

- Budget: 3.1m€ in 2011; shared equally
- Avg duration of projects: 3yrs ; Avg funding: 190k €
- Rolling submissions of proposals
 - 2 Peer review panels per year (May/Nov)
 - 1 out of 4 proposals accepted

- 400+ projects approved
- 1400+ papers published (since 1999)
- High and competitive impact factor
- 90+ scientific seminars organized
- 2000+ visits ; 4000+ scientists; 300+ PhDs ; 200+ Postdocs

Promoting joint research

INDO FRENCH JOINT LABS

Current Indo French Joint laboratories

- Indo French Cell for **Water Sciences** (IISc – IRD)
- Indo French Centre for **Ground Water Research** (NGRI – BRGM)
- **Neurosciences** – Protect (NBRC – INSERM)
- French Indian Associated Lab for **Nuclear Sciences** (BARC - CEA - CNRS)
- IJL in **Immuno-haematology** – IMPACT (NIIImh - INSERM – UPMC)
- Joint Laboratory for **Sustainable Chemistry at Interfaces** (IICT – CNRS - Univ. Rennes)
- IJL Catalysis for **Sustainable and Environmental Chemistry** (NCL – CNRS -Univ. Lille)
- Joint laboratory in **Solid State Structural Chemistry** (IISc – Crismat – CNRS – Univ. Bordeaux)
- Indo French Centre for **Applied Mathematics** (IISc and others-CNRS)
- Indo French **Formal Methods** Lab (CMI-CNRS- ENS Cachan–Univ Bordeaux)
- **Forthcoming: Immunology and infectious diseases, basic mathematics, biological sciences...**

Producing collaborative science

**FRENCH RESEARCH INSTITUTES
IN INDIA**

The French Institute of Pondicherry

- UMIFRE 21 CNRS-MAE / 20 faculty / 500+ publications over the past 5 years
- Established in 1955
- Indology, social sciences and ecology

The “Centre de Sciences Humaines” Delhi

- UMIFRE 20 CNRS-MAE / 10 faculty / 200+ publications over the past 5 years
- Established in 1990
- Economic reform in politics & society, urban dynamics etc.

Enabling sustainable partnerships

**SCHOLARSHIPS, GRANTS AND
FELLOWSHIPS**

French Embassy Scholarships

- Full scholarships for several months for PhDs and Post docs – 221 (since 2005), 150+ publications
- **Thematic calls every year**
- Calls announced at the end of the year for the following year
- Highly competitive: ~30% success rate
- **Next call: October 2012**

Travel Grants

- For Visiting Scientists
- To help R&D labs in India and in France attract the best scientists from both countries
- Assistance in pre-selection with candidates in India and in France
- Round trip airfare and visa fees
- Rolling applications
- And other grants: ANR , CNRS, INSERM, INRA, etc.

Expanding our horizons

**OTHER COLLABORATIONS AND
INITIATIVES**

Other initiatives /1

Expanding our activities

- Space collaboration between CNES and ISRO
 - Meghatropiques (Oct 2011) and Saral (2012?)
- ANR – DST MoU : expanding funding for projects, a 3-year agreement
 - First call in Nov 2012: engineering sciences & infectious diseases
- Indo French Water Network (2012)
- Indo French Club R&D (2012)

Other initiatives /2

Expanding our activities

- Charpak-Raman Fellowships 2012 (DST-through CEFIPRA)
- French Embassy: over 300 full scholarships from Bachelor to Research degrees
- 20 INSERM – ICMR projects annually
- ~15 FMSH-ICCSR funded scholarships
- In 2011-12: 122 positions at INSERM, 50+ INRA
Chaires d'excellence : ANR, Regional programs (Pierre de Fermat), Chaire Joliot, Institut Gustave Roussy, Nanosciences Chairs of Excellence etc.

Other initiatives /3

At the forefront of a strong Indo EU ST&I future



the INDIA SI House

- Feasibility study for the opening of an EU India Joint House for ST&I
- 6+1 countries in the consortium of 9 partners
- Coordinated by France
- Other willing EU states consulted and associated to the study
- Using CEFIPRA's experience to build a common future

Other initiatives /4

At the forefront of a strong Indo EU ST&I future



Work Packages of INDIA SI House

- Exploring the political will
- Exploring the legal schemes and tools
- Exploring the scientific will and identifying priorities
- Benchmarking and guidelines/recommendations
- Management/Coordination/Dissemination

**You can't cross the sea by standing and
staring at the water**

Rabindranath Tagore

Thank you

www.frenchsciencetoday.org

Keep abreast of all the latest news and sign up for our quarterly
newsletter at www.frenchsciencetoday.org