
NEW WAYS OF SOLVING PROBLEMS IN APPLIED RESEARCH: THE EXAMPLE OF A JOINT FRENCH-GERMAN RESEARCH PROGRAMME

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Transnational programmes in applied research: A new way to respond to Grand Challenges?

Lund declaration: “Europe must focus on the grand challenges of our time” → moving beyond rigid thematic approaches; new deal among European institutions and Member States; involving stakeholders from private and public sectors,...

Our argument: Research cooperation beyond national borders can contribute to tackle the grand challenges of our present world

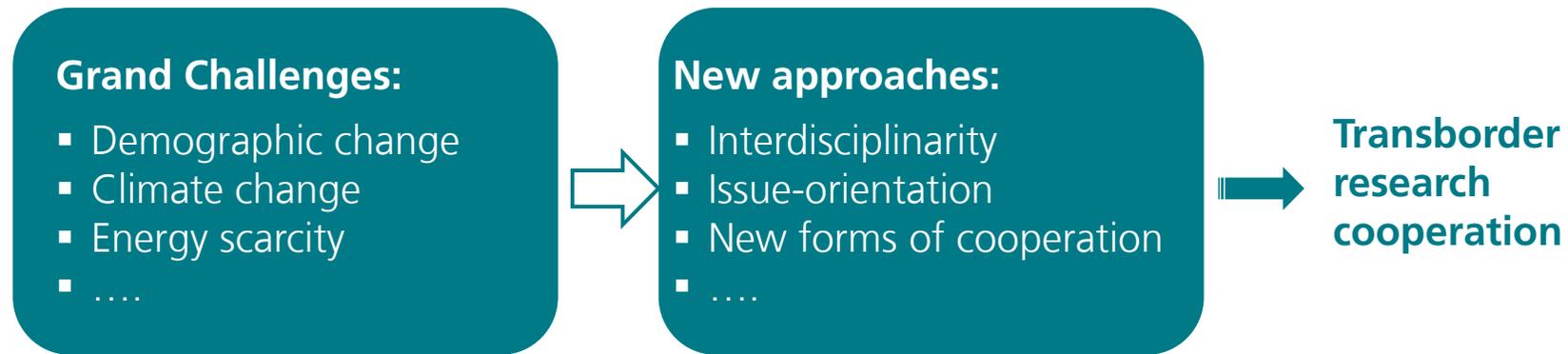
The focus of our presentation: To present a French-German research programme, to give insight into the different levels of involved actors, and to show learning effects

Our methodology: Accompanying exercise of the French-German research programme PICF (*Programme Inter Carnot Fraunhofer*) → insights into programme rationale and bilateral projects. Interviews with experts and participants in French-German research cooperation, synthesis of information gained, development of recommendations for transnational research alliances

Overview of the presentation

- **Introduction:** Grand Challenges and international research cooperation
- The **French-German research programme PICF**
 - Presentation of the programme and its specificities: issue- and strategy-oriented approach
 - Project example: Insights into PICF
 - Learning effects from PICF on different dimensions
- **Conclusions**

Introduction: Grand Challenges and international research cooperation



Why international cooperation in research?

- Access to broader knowledge base, complementary competencies
- Bundling of resources (human, financial, infrastructure)
- Advancing science and technology, scientific reputation
- Enhanced visibility and reputation, qualification
- Access to divergent research paradigms, “thinking out of the box”
- Competitive advantages through knowledge of national backgrounds
- Application-oriented research: tends to be nationally oriented (client-specific)

French-German research cooperation

Large spectrum of transnational research cooperation activities



- Exchange of individual researchers
- Joint research projects
- Opening of national research programmes
- Joint research programmes
- Joint research groups (long-term cooperation; strategic alliances)
- Joint institutes

Rationale of French-German research cooperation

- Most important commercial partners, excellent research organisations
- Strong political will to cooperate, Elysée Treaty 1963: Policy coordination in certain areas
- However: divergent innovation policy traditions, research and innovation systems

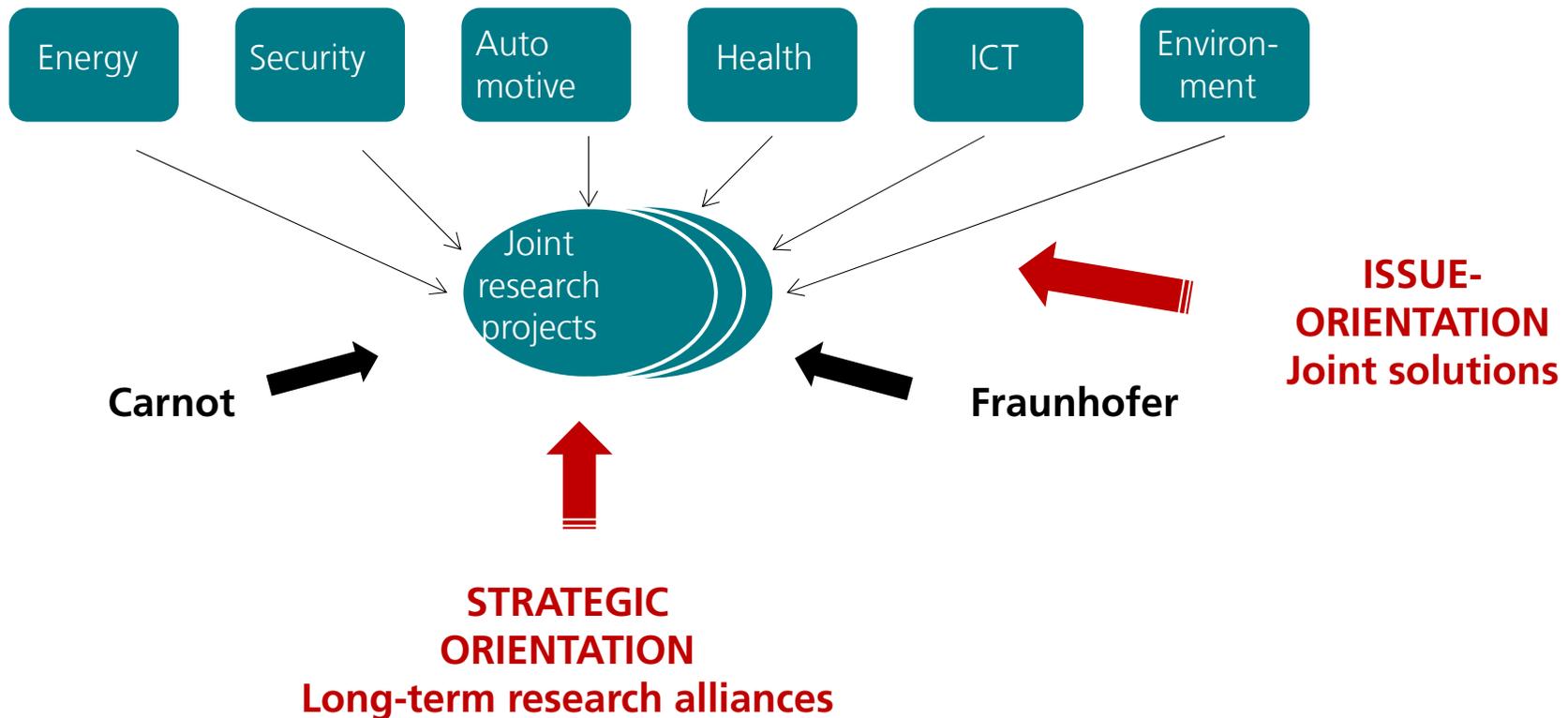
The French-German research programme PICF (*Programme Inter Carnot Fraunhofer*) (1)

- **Joint research programme** of the *Agence Nationale de la Recherche* (ANR) and the Federal Ministry of Education and Research (BMBF) for collaborative research projects between French *Instituts Carnots* and German institutes of the Fraunhofer Gesellschaft

Carnot: Label (5 years, renewable) to support partnership research between public laboratories and companies. Additional grants reflecting industrial contracts. Currently 31 *Instituts Carnot*. Fraunhofer: Organisation for application-oriented research with about 80 research facilities in Germany. Funding structure: ~70% research contracts, ~30% public institutional funding
- **Goals**: Scientific leadership in national and international R&D; knowledge and technology transfer; long-term strategic French-German research organisation alliances
- **Three calls** in 2008, 2009, 2011. 26 collaborative projects, €30m. Predecessor: P2IC (2007), 5 projects. Project management: ANR, Fraunhofer
- **Participants**: Fraunhofer and Carnot institutes (+ external partners), project duration: 2-3 years

The French-German research programme PICF (Programme Inter Carnot Fraunhofer) (2)

Projects in six cooperation fields:



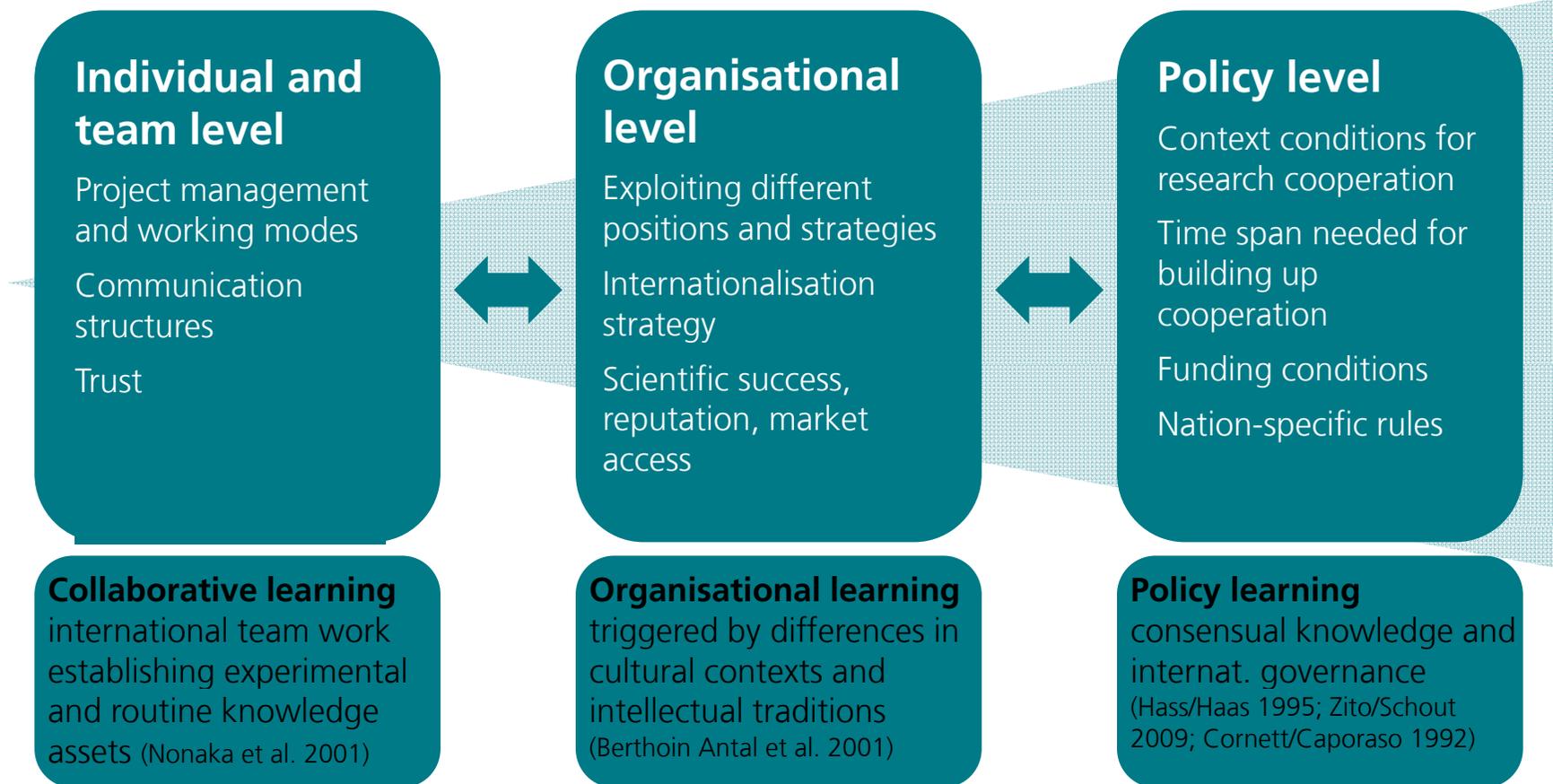
PICF project example: The joint research project SolarBond (1)

- **Focus:** Development of high efficiency multi-junction solar cells on alternative substrates for use in terrestrial concentrator photovoltaic applications
- **Participants:** 1 Fraunhofer, 1 Carnot institute, 1 French company
- **Goal:** Further development of economic use of solar energy through reduced production costs and increased efficiency rates
- **Vision:** Long-term stable research partnership; to be jointly successful
- **Measures:** Bundling of specific competencies for new technological solutions -> division of labour, linking expertise and infrastructure of both partners, close interlinkage of individual work packages, market introduction and commercialisation aspects through integration of industrial companies
 - ➔ PICF: opportunity to collaborate and intensify existing contacts

PICF project example: The joint research project SolarBond (2)

- **Success factors:**
 - Bundling of equipment and infrastructure
 - Joint search for new strategic options
 - IPR agreements
 - Efficient communication structure
 - Strong ties to industry
- **Experience:**
 - Successful collaboration needs strong will to cooperate, beneficial and stable framework conditions, stable structure of responsible persons
 - Strategic collaboration between partners is a promising means to foster excellence (through targeted selection of research partners)
 - Continuity and adequate funding for pre-commercial development important
- December 2011: Franco German Business Award

Linking empirical results to academic debates on learning and intercultural management



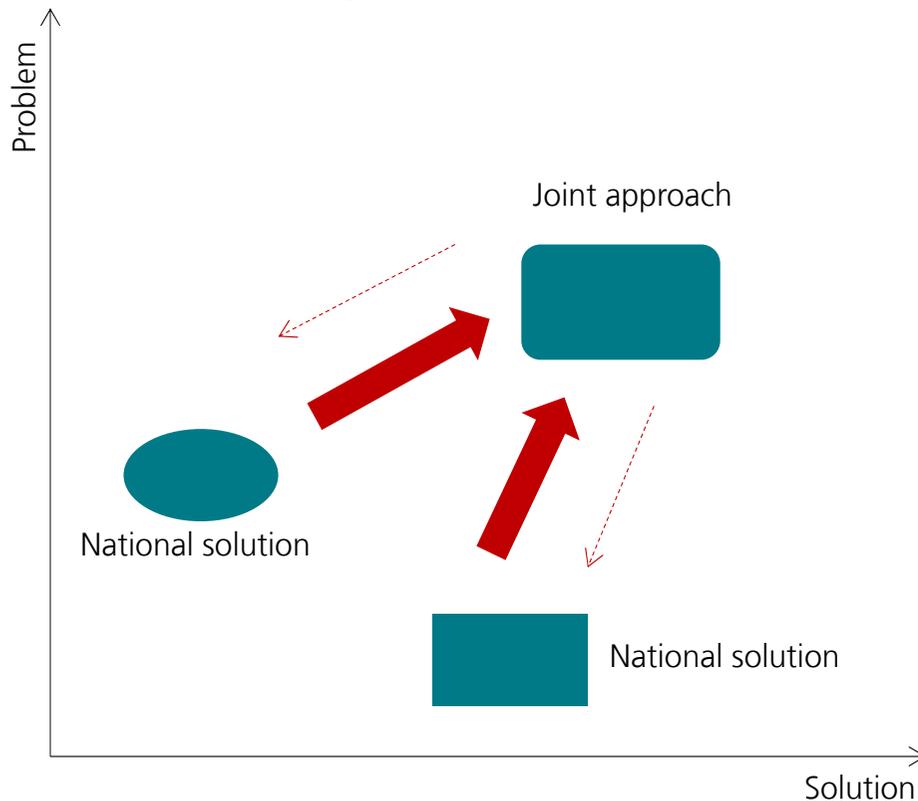
Research on national cultures and intercultural management, internationalisation of research, innovation policies and contexts (e.g. Barmeyer 2000, 2004, Hofstede; Edler 2007, Harris 2007, Mittermaier et al. 2007; Mustar/Larédo 2002, Meyer-Krahmer 2001, Frietsch/ Kroll 2010, Muller et al. 2010)

Learning effects from PICF: Synopsis

- Development of **new partnership models**, bringing together knowledge and competencies
- Strengthening **knowledge and technology transfer** between science and industry in and between both countries
- **Bundling of competencies and resources** -> enhanced market opportunities, enlarged proposals for industry
- **Access to further actors** in research and industry, broadening of research and business networks
- **Enhancing experience** in applied research through access to research traditions and strategies, working cultures and incentive mechanisms -> win-win-situation for all participants

Conclusion: Transnational cooperation as means to answer to Grand Challenges?

**New ways are needed to respond to Grand Challenges ...
... joint efforts in research can produce efficient solutions:**



- Larger pool of resources (human, financial, infrastructure, methods,...)
- Enhanced availability of knowledge and competencies
- Higher knowledge of and access to markets and clients
- Benefit from intercultural work: working modes, mentalities, perceptions, knowledge of research landscapes,...

But also: Accessing new problems, e.g. through different regulatory frameworks

Summary

- **Pioneering role** of PICF as bilateral programme in applied research
- **High level of integration** in collaborative market-oriented research
- PICF brings together industrial needs (**issue-orientation**) with strategic goals (**strategy-orientation**)
- “**win³-situation**”: funding bodies receive high-ranking results to tackle grand challenges, research organisations and researchers get access to wider resources and competencies, industry can expect high-quality solutions responding to their needs
- Bilateral research programmes can serve as base for stable and long-term **research partnerships**
- **Learning effects** gained so far can be beneficial for further bilateral research programmes

Thank you very much for your attention!

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