

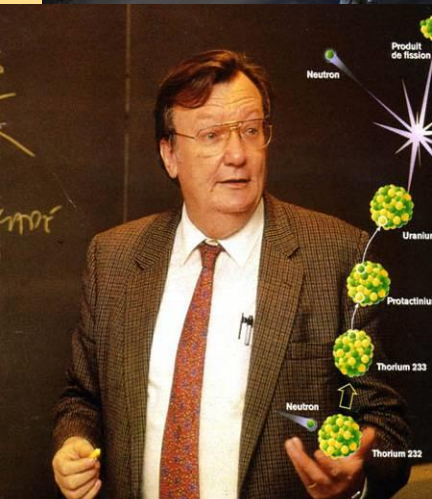


ITALY: SCIENCE & TECHNOLOGY COOPERATION WITH CHINA

Plinio Innocenzi
Science & Technology Councillor
Embassy of Italy to P.R. China



Research & Innovate with Europe!
Awareness Raising and Information Tour of China
Campaign 2013



A GLIMPSE TO ITALY'S S&T

- **Gross Domestic Expenditure on R&D (GERD)** as percentage of GDP (total, public+private): **1.16%** (2010) (*real 1.2-1.3%*)
(Italy's GDP=2314 billions of US\$ in 2008)
- **R&D Investment** (2010, total): \approx 20.9 billions €
(28.6 billions US\$)
- **Share public-private**: 51.2% public - 48.8% private (2006)
- **R&D Expenditure (public)**: 0.56% of GDP in 2010 (foreseen 0.67% in 2013 and 1% before 2020) with 1/3 to Government Institutions, 1/3 to University, 1/3 to Industry
- **Scientists**: 192,000 in 2006 (+4%/y in the 1996-2006 period); estimated in 2010: 215,000 (12th in the World)
- **Scientific Publications**: (1998-2009 SCIE-Science Citation Index Expanded): 7th for cited papers (4,044,512); 8th for published papers (394 428, main fields: medicine, physics, chemistry, biology); 2nd position (after Switzerland) as productivity (nr. of cited papers/scientist)

S&T MAIN GENERAL GOALS

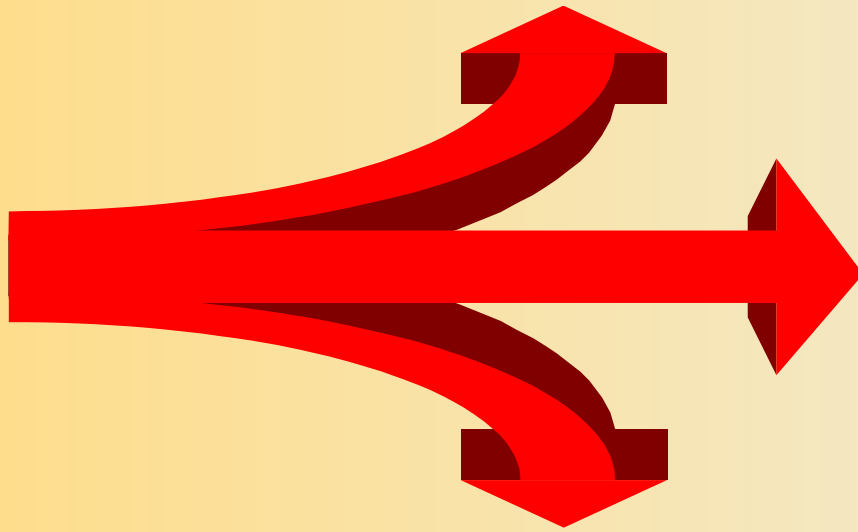
General goals of Italy's S&T Policy

- **Improve Scientific Excellence** (*high at present*)
- **Improve Industrial Competitiveness** (*low at present as support from public side*)
- **Balance Scientific Excellence & Industrial Competitiveness**

NATIONAL RESEARCH PLAN (PNR) 2010-2013 GUIDELINES

S&T priorities for National research in order to foster the position of the Country and develop excellence in the most promising and added value technological areas:

reinforcement of the scientific base of the country, looking for excellence, merit, internationalisation, economic growth and making the most of human capital - ***Advancing of the knowledge Frontiers + Supporting Research for the development of key multi-sectors enabling Technologies***



strengthening the technological level of the Italian productive system to maintain competitiveness, focusing on strategic industrial research programmes involving also the participation of universities and research centres

Strengthening of industrial research and technological development activities + Promoting SMEs capacity in innovating products and processes

support active participation to EU programmes and promotion of international agreements

NATIONAL RESEARCH PLAN (PNR) 2010-2013

STRATEGIC LINES

- 1. Advancing of the knowledge frontiers**
- 2. Supporting research for the development of key multi-sectors enabling technologies**
- 3. Strengthening of industrial research and technological development activities**
- 4. Promoting SMEs capacity in innovating products and processes**

NATIONAL RESEARCH PLAN (PNR) 2010-2013

PRIORITIES & MAIN APPLICATION SECTORS

- **Science-Industry Interactions**
- **Joint coordinated Actions (European-National-Regional) and Technology Foresight**
- **Development Sustainability (Renewable energies, Agriculture, Environment, Made in Italy, Cultural Heritage, Mobility, Homeland Security, Health and Life Science)**
- **Main application sectors: Genetics, Energy, Materials, Brain Science, Information, Environment**
- **Environmental and Social Sustainability of Projects**

STRATEGIC AREAS

(National&European level)

- **Advanced Materials**
- **Transport, building trade, logistic**
- **Aerospace and aeronautics.**
- **Advanced manufacturing systems**
- **Agriculture and Food**
- **ICT**
- **Energy saving and green energy**
- **New technologies for life (health and wellness)**

NATIONAL RESEARCH PLAN (PNR) 2010-2013

FUNDING

BASIC RESEARCH	51.2%	
Medium-Long Term Projects		15.4%
International R&D		14.4%
Infrastructures		7.8%
Human Resources		13.6%
INDUSTRIAL DEVELOPMENT	32.0%	
SYSTEMS GOVERNANCE	16.8%	
Total	100%	

Total Provisional Funding 2010-13 = 14,000 Million €

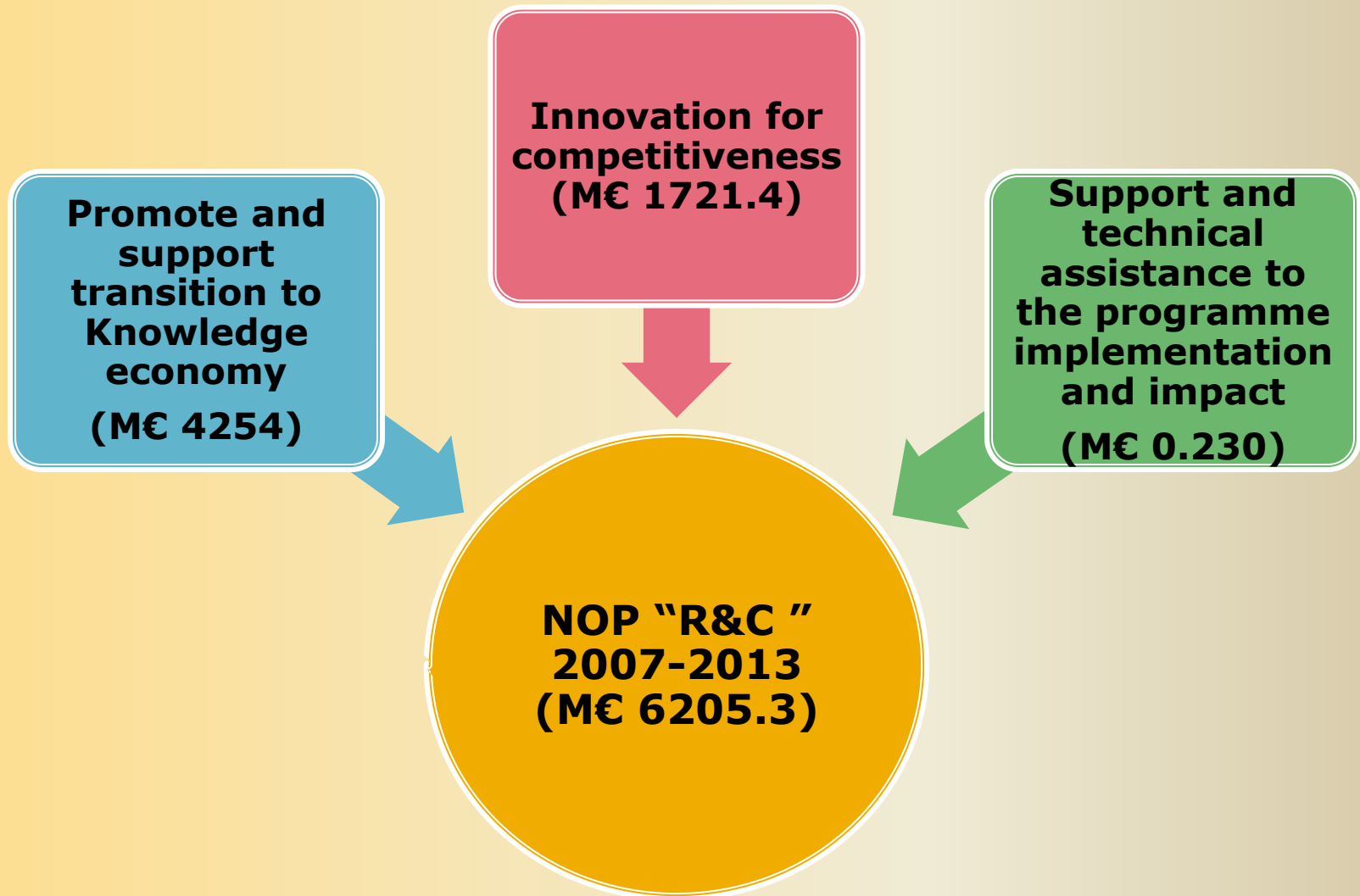
NATIONAL RESEARCH PLAN (PNR) 2010-2013
Joint actions MIUR (Ministry of Education, University and Research)-MSE (Ministry of Economic Development)

Industrial R&D: “Industry 2015” has been started in 2006 as a Plan of “Industrial Innovation” establishing strategic lines for strengthening the competitiveness of Italian industrial matrix:

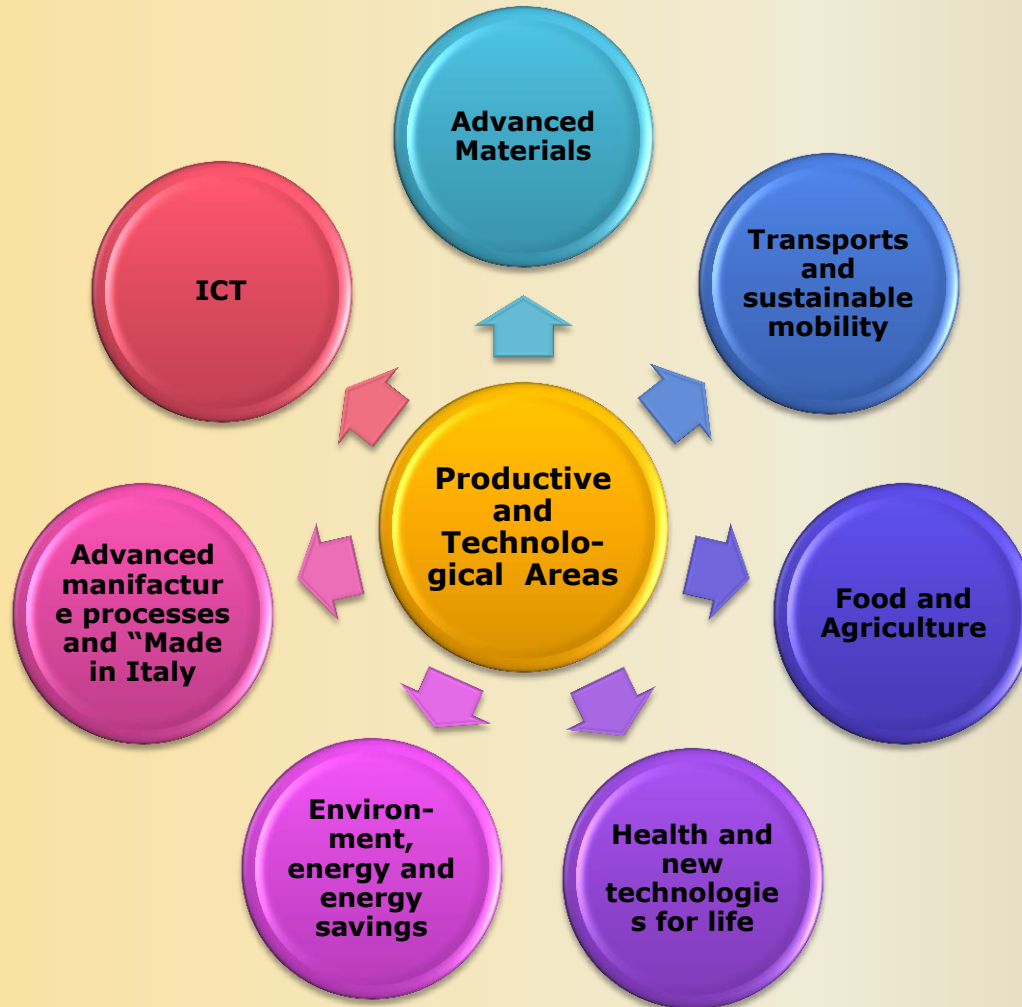
Five main sectors are involved :

- **Energy Efficiency**
- **Sustainable Mobility**
- **New Technologies for Life**
- **New Technologies for Made in Italy**
- **New Technologies for Human Heritage**

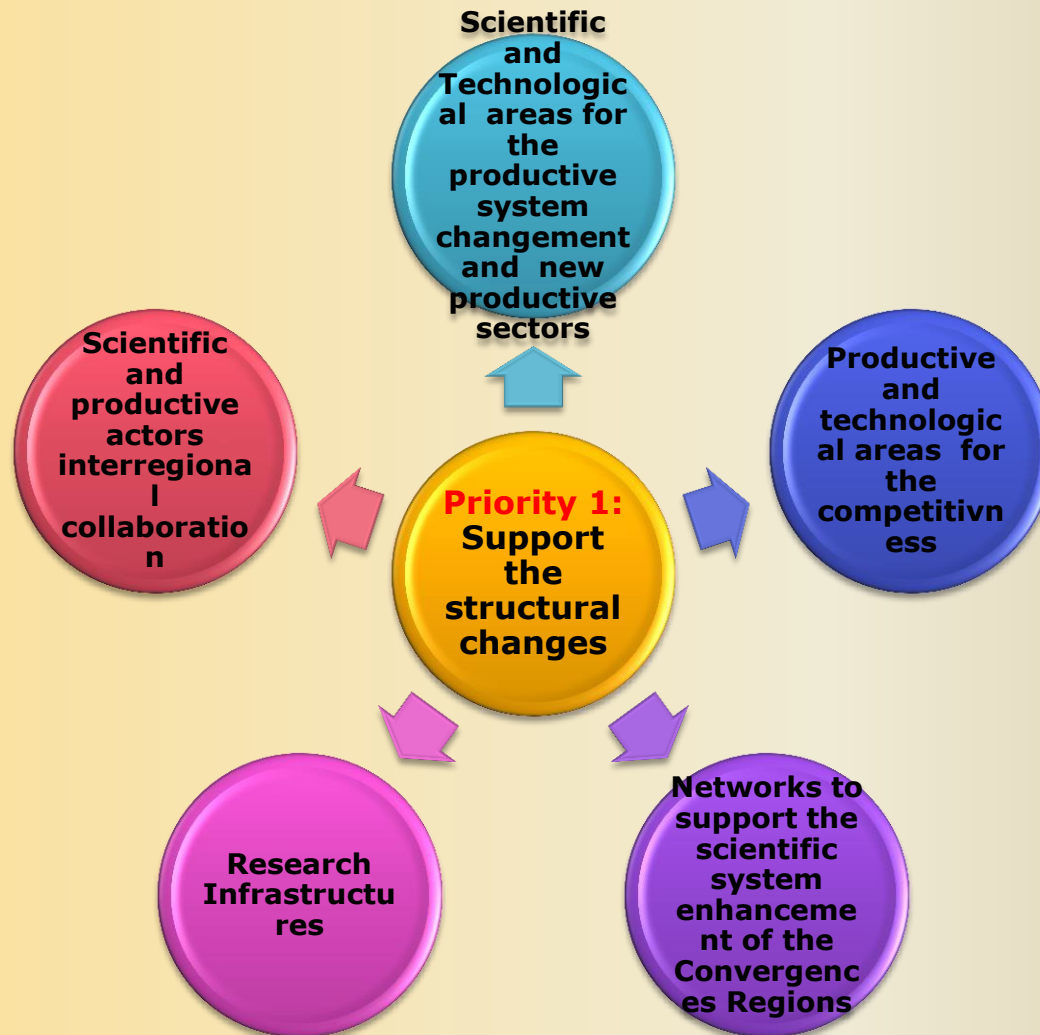
National Operative Programme (NOP) 2007-2013 "Research & Competitiveness"



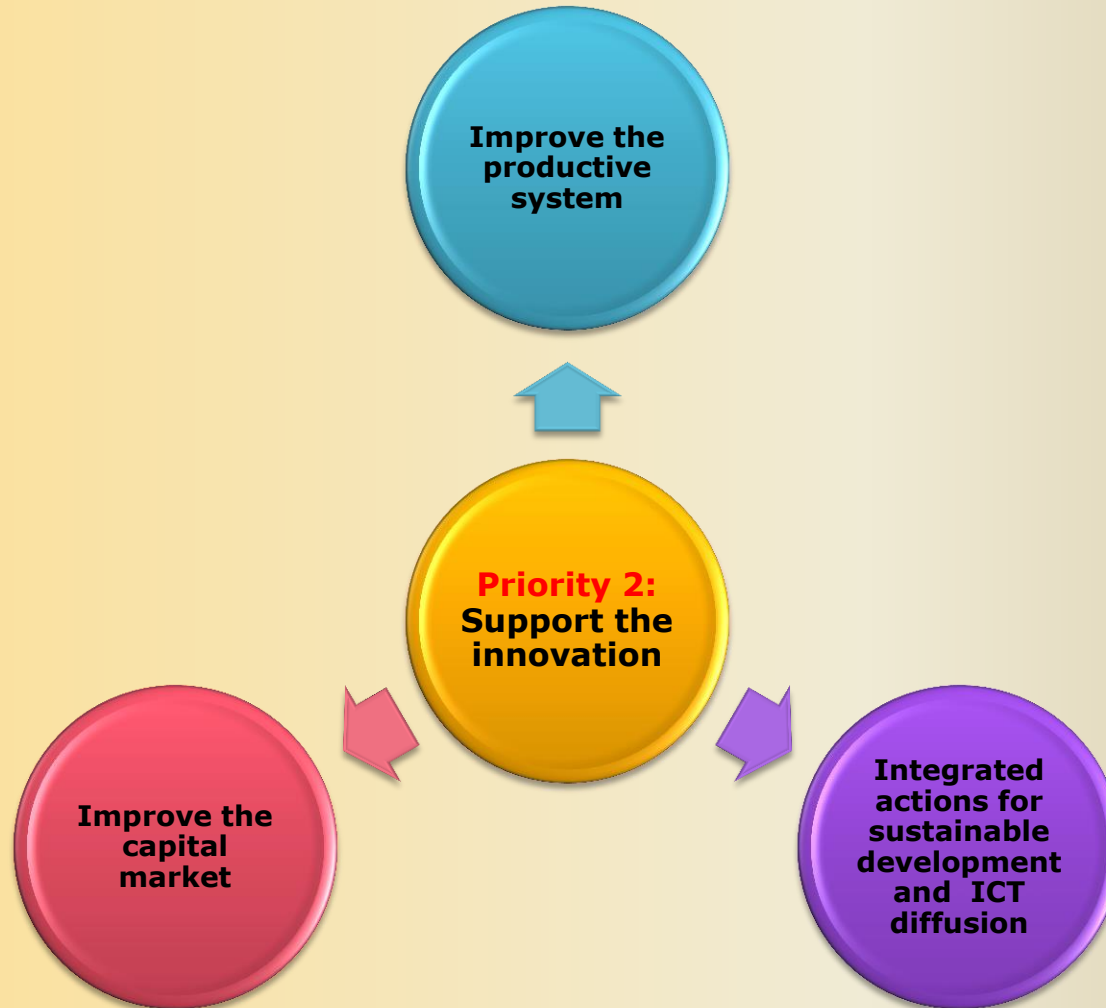
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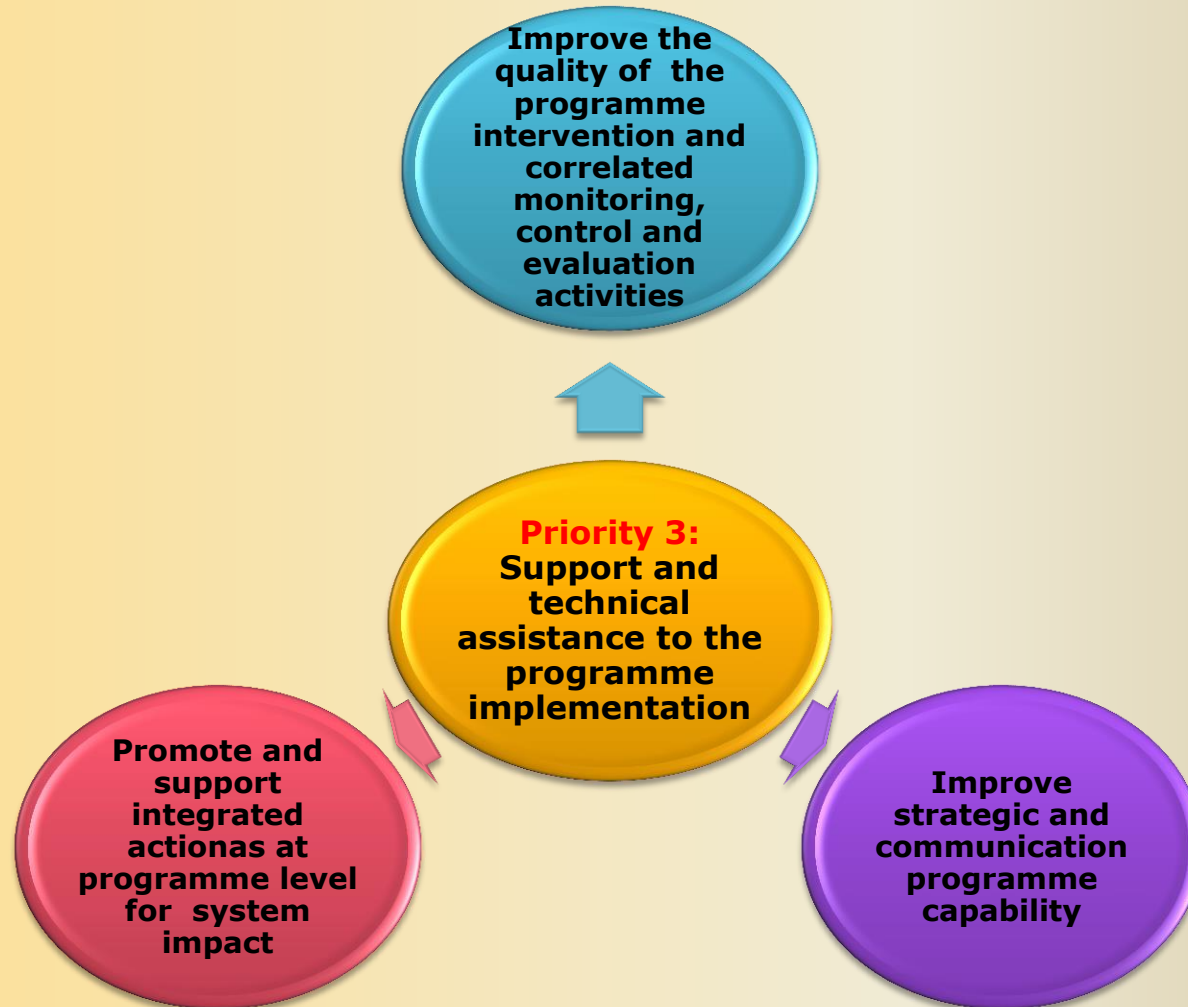
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INTERNATIONAL COOPERATION

GOALS OF S&T GLOBALIZATION

- **Co-use World's S&T resources and facilities**
- **Contribute to World's science progress**
- **Strengthen national S&T capability**
- **Forge global S&T networks, 'R&D hub'**
- **Build up international partnerships**
- **Foster advanced research environment**
- **Improve National Technological Competitiveness**



2013 - 2015

ITALY – CHINA

S&T COOPERATION

Projects for the Exchange of Researchers and Joint Research Projects of Particular Relevance

EXECUTIVE PROGRAMME FOR SCIENTIFIC AND TECHNOLOGICAL COOPERATION BETWEEN THE ITALIAN REPUBLIC AND THE PEOPLE'S REPUBLIC OF CHINA FOR THE YEARS 2013 - 2015

The Executive Programme is valid for three years,
next call will be in 2015.

It supports mobility and high relevance projects.

Priority cooperation areas

- **Applied Basic Sciences (Chemistry, Mathematics and Physics)**
- **Biotechnology and Medicine**
- **Energy & Environment**
- **Information Communication Technology**
- **Nanotechnology and Advanced Materials**
- **Space and Aeronautics**
- **Technology Applied to Cultural Heritage**

Cooperation through Istituto Nazionale di Fisica Nucleare (INFN)

Agreement with the Chinese Academy of Science

1. Memorandum of Understanding between INFN and IHEP and establishment of a Joint Laboratory (June 2012)

2. General Framework Agreement between CAS and INFN, June 2011

Exchange of researchers, senior and junior. 20 + 20 three months scholarships

Agreement with the China Institute of Atomic Energy (CIAE) and INFN

December 2009

5 scholarships per year to Chinese researchers to work at Laboratori Nazionali di Legnaro ed i Laboratori Nazionali del Sud.



ARGO a YanBaJing:

*un osservatorio della radiazione cosmica
di altissima energia*

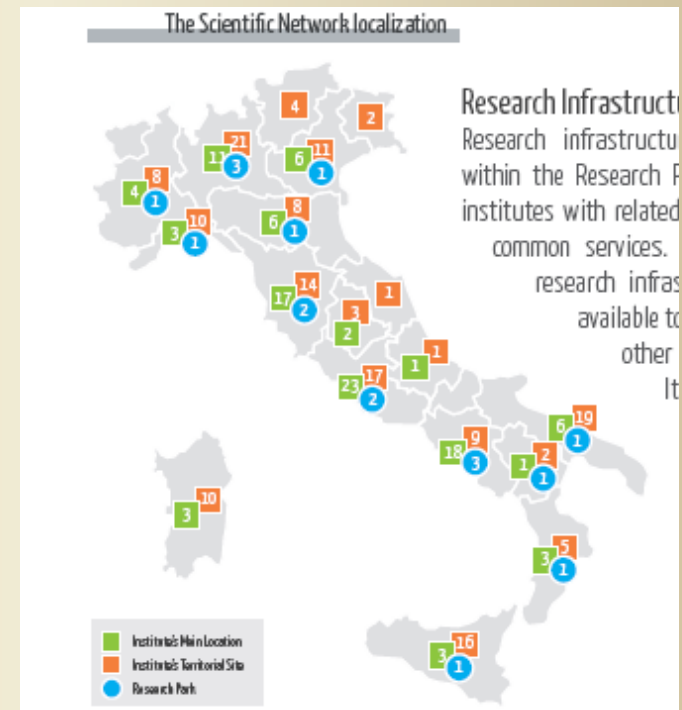


4300 m
experiment
in Tibet
on Cosmic rays



Cooperation through Consiglio Nazionale delle Ricerche (CNR)

- 1. Agreement CNR – Chinese Academy of Agricultural Sciences (CAAS)**
2 projects financed
- 2. Agreement CNR – Chinese Academy of Forestry (CAF)**
2 projects financed
- 3. Accordo CNR – Chinese Academy of Sciences (CAS)**
10 projects financed





**THANK YOU FOR
YOUR KIND
ATTENTION**