National Technology Platforms
as Tools for Involvement of Researchers
in R&D International Co-operation

«German-Russian Forum Biotechnology»

Novosibirsk
June 15th – 19th 2009

Dr. Irina SHAROVA,
Deputy Director,
Russian National Contact Point
«Biotechnology»
Bio-NCP of Russia was established by the Ministry of Science and Education of the RF on the basis of A.N. Bakh Institute of Biochemistry of Russian Academy of Sciences in May 2003. The main objective of Bio-NCP of Russia is promotion of Russian science integration into the European Scientific Area («ERA») by participation in the EC-FP6/7 Programmes.
Activities

- Providing with **information** on calls of FP7 and other European programmes of S/T cooperation;
- Assistance in **partner search** for joint participation in research projects;
- **Guidelines** on proposal writing;
- Layout of the project proposals in the **database** available to European researchers;
- Actual information on **events** in the field of S/T cooperation;
- Creating and developing of **regional infrastructure** for information and consultancy provision of S/T co-operation with EU
Bio-NCP of Russia

- NCP structure
  (Department for international project INBI RAS)
- Human resources (project managers)
  INTAS, TASIS, FP6/7 ACTIVITIES
- Mirror **Technology Platforms**, expert groups
- **Working Group** (EU-Ru)
- **Database** of Potential Participants
- Dissemination System - **NEWS letters**
- **Information materials** (Flyer, Poster, Leaflet)
- **Regions** Information points
- **Website** in English and in the Russian
- **International Symposium**
- **Training seminars, INFO-days**
National FP6/7 FAB Contact Points

Establishing Russian Regional Contact Centers

Arkhangel’sk, Irkutsk, Nizhniy Novgorod, Novosibirsk, Petrozavodsk, Rostov, Saratov, Vladivostok, Voronezh, Yekaterinburg
Objectives

Development of mechanisms for:

- Defining Russian R&D priorities which are relevant to European FP7 topics
- Decision making in carrying out of joint EC-Russia projects
- Structuring of Russian R&D community
Technology Platforms

Essential instruments of FP7

- Choosing of R&D strategic areas
- Evaluation of potential market in technology
- TPs enable harmonisation of interests of diverse stakeholders, countries and regions
- Mobilization of diversified financial resources
European Technology Platforms

Knowledge-Based Bio-Economy

- Global Animal Health
- BioFuels
- Forestry
- Farm Animal Breeding
- Industrial Bio-Technology
- Plants for the Future
- Food for Life
- Food for Life
Russian National Priorities

- Russian National priorities in science, technology and technique areas:
  - Information- and telecommunication technologies and electronics
  - Nanotechnologies and materials
  - **Life sciences (Technologies of the live systems)**
  - Environment protection and rational nature management
  - Energy and energy-saving
  - Security and anti-terrorism activities
  - Advanced weapons, military and special machinery and equipment

- Critical technologies in Life sciences
  - Bioengineering technologies
  - Bioinformatic technologies
  - Cell technologies including stem cells
  - Biosensing technologies
  - Biomedical technologies for life support and human protection
  - Genomic and postgenomic technologies for drug development
  - Biocatalytic and byosynthetic technologies
FP7 TP-FAB Russian Technology Platforms

- Industrial Biotechnology
- Forestry
- Plants for the Future
- Animal Health
- Food Safety
- Fisheries and Aquaculture
Russian Technology Platform
“Food for Life”
MAIN PARTICIPANTS:
MOSCOW STATE UNIVERSITY OF APPLIED BIOTECHNOLOGY
MOSCOW STATE UNIVERSITY OF FOOD PRODUCTION

- Institute of biological industry
- Institute of fishery and oceanography
- Institute of dairy industry
- Institute of meat industry
- INSTITUTE OF NUTRITION
- A.N. BAKH INSTITUTE OF BIOCHEMISTRY RAS
- MSUFP
- Institute of childish food
- Institute of poultry processing industry
- Institute of control, standardization, certification of veterinary preparations
### Russian Industrial Biotechnology Technology Platform

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<th>A.N. Bach Institute of Biochemistry</th>
<th>Moscow State University</th>
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<td>Puschino Research Centre of RAS</td>
<td>OAO VOSTOK</td>
<td>Institute of Microbiology of RAS</td>
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<td>Institute of Plastics</td>
<td>SMEs</td>
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<td>Institute of Engineering Ecology</td>
<td>Corporation Biotechnology, JSC</td>
<td>Centre of Cardiac Surgery RAMS</td>
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</table>
Development of the technology and creation of second-generation biofuel plants

“Corporation Biotechnology, JSC” has been established with the main focus on cellulose biobutanol
Lignocellulosic biorefinery
Biobutanol – second generation biofuel

Butanol can substitute gasoline due to its physical characteristics, cost effectiveness and safety.

The biobutanol vapors’ low pressure and low water sensitivity in gasoline mixture enhance the potential for its application.

Biobutanol is more cost-efficient, improves vehicle fuel performance and fuel mileage.

The fuel-grade biobutanol as well as ethanol contains “green” carbon, which reduces GHG emissions.

A proprietary technology for biobutanol production has been developed and demonstrated at Tulun plant (Irkutsk region, September 2008)
Russian technology platform «ANIMAL HEALTH AND WELFARE» is organized by Russian Society of Biotechnologists and integrates profile institutes, companies and organizations involved in solution of farm animal health and welfare problems. Consortium activity is associated with FP7 programme and focused on reproduction, nutrition and veterinary issues.

MAIN TOPICS OF PLATFORM:

- Molecular biology and genetics of farm animals;
- Diagnostics, monitoring, prophylaxis and treatment of farm animals diseases;
- Feed production for farm animals;
- Utilization of waste in stock-raising.

Veterinary laboratory diagnostics is priority
EC-Russia Joint Work Group on TP-FAB

- Established in 2005
- Provides a mechanism for decision making
  - NCP advises to and implements its decisions
  - to enable close co-ordination with relevant
    European Technology Platforms a Steering Group
    was established comprising leading Russian
    scientists with expertise in
    - Industrial Biotechnology
    - Plant Biotechnology
    - Forestry
    - Food Safety
    - Animal Health
From 2008, scientific research in Russia will be supported from Government by programmes:

- New Materials and Nanotechnologies
- Life Sciences and Biotechnology
- Energy and Energy Efficiency
- Rational Nature Use
- Information and Communication Technologies (ICTs)
Ministerial Working Group on FAB

- WG established in 2006
- Provides a mechanism for decision making

NCP advises to and implements WG decisions

Comprises leading Russian scientists

Structuring of Russian R&D Community

- EC FAB
- Ministerial Working Group on FAB
- NCP
- Group of experts

- Industrial Biotechnology
- Forestry
- Plants
- Food Safety
- Animal Health
- Fisheries
Role of Bio-NCP of Russia in Formation of Russian TP

Co-ordination and harmonization of national interests and priorities of the Russian Federation in the area of science and technology with the strategy of science development in Europe

Joint EU-RF R&D projects
EU-Russia Co-ordinated and co-funded projects

Seventh Research Framework Programme (FP7)

Food, Agriculture and Fisheries, and Biotechnology

Knowledge-Based Bio-Economy (KBBE)

Federal Targeted Programme “Research and Development in priority areas of science and technology of Russia for 2007-2012”
Coordinated calls

- New mechanism of EC-RF collaboration has been elaborated
  - Matching in time
  - Funding schemes and rules
  - Evaluation mechanisms
  - IPR related documents
  - Etc.
The European Commission and the Russian Federal Agency for Science and Innovation jointly fund two EU-Russia research projects in the area of "Life Sciences, biotechnology and biochemistry for sustainable non-food products and processes":

**KBBE-2008-3-1-04 : Plant - produced Vaccines**

**KBBE-2008-3-2-01: Molecular Modelling for Rational Design of Industrial Enzymes**

The European Commission and the Russian Federal Agency for Science and Innovation will each reserve a dedicated total budget of up to EUR 4 000 000.

**Minimum Number of Participants:**

- 2 from different EU Member States or FP-Associated Countries* and
- 2 from different federal units (provinces, oblasts, republics, territories, districts, federal cities) from Russia.
Two Calls were launched, respectively by EC (KBBE-2008-2B) and FASI

All EU-RU project consortia have to submit their proposals to the FP7 KBBE-2008-2B Call according to the FP7 submission procedure.

The Russian participants in each project have to submit their corresponding Russian proposal (in Russian) also to the Russian Call to be launched by FASI, according to the Russian rules.

The Russian Call will have a submission deadline later than the FP7 Call www.fasi.gov.ru

The Russian participants are advised to submit the corresponding Russian proposals at the same time or as soon as possible after the overall proposal has been submitted by the EU coordinator to the EC.
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<tr>
<th>FP7-KBBE-2008-2B</th>
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<th>PLAPROVA</th>
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<td>- Moscow State University, Faculty of Biology</td>
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<td>- Research Institute of Influenza of Russian Academy of Medical Science</td>
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<td>- FGI Federal Centre for Animal Health</td>
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**White (industrial) biotechnology**

*Biotechnology: The use of nature’s toolbox for industrial processes*
In silico Rational Engineering of Novel Enzymes
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<th>Country</th>
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<tr>
<td>1 Università degli Studi di Trieste</td>
<td>IT</td>
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<td>2 School of Biotechnology/Biochemistry, Kungliga Tekniska Högskolan, Stockholm</td>
<td>SE</td>
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<td>3 University of Copenhagen</td>
<td>DK</td>
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<td>4 Technische Universiteit Delft</td>
<td>NL</td>
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<td>5 Novozymes A/S</td>
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<td>6 The National University of Uzbekistan</td>
<td>UZ</td>
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<td>Russian Team:</td>
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<tr>
<td>7 Belozersky Institute of Physicochemical Biology, Lomonosov Moscow State University</td>
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Plant Production of Vaccines

Russian Team:

- Centre Bioengineering of the Russian academy of sciences
- Moscow State University, Faculty of Biology
- Research Institute of Influenza of Russian Academy of Medical Science (SPb)
- FGI Federal Centre for Animal Health (Vladimir)
EU-RUSSIA Symposia

An important instrument to strengthen EU-Russia cooperation in biotech area

- I Moscow 2004
- II Moscow 2005
- III St. Petersburg 2006
- IV Suzdal 2007
- V International Symposium 2008

«EU-RUSSIA: COOPERATION in BIOTECHNOLOGY, AGRICULTURE, FORESTRY, FISHERIES AND FOOD in the 7-th FRAMEWORK PROGRAMME»

Pushchino, 1-3 Oct. 2008
1) FP7-KBBE-2007-1, Targeted opening, \textit{FishPopTrace} \\
\textit{Fish Population Structure and Traceability}

2) FP7-KBBE-2007-1, general topic, \textit{DISCO} \\
\textit{Targeted DISCOvery of novel cellulases and hemicellulases and their reaction mechanisms for hydrolysis of lignocellulosic biomass}

3) FP7-KBBE-2007-1, SICA – (Russia), \textit{PROSPARE} \\
\textit{PROgress in Saving Proteins And Recovering Energy}

4) FP7-KBBE-2007-2A, general topic, \textit{ETHERPATHS} \\
\textit{Characterization and modelling of dietary effects mediated by gut microbiota on lipid metabolism}

5) FP7-KBBE-2007-2A, SICA – ICPC, \textit{MycoRed} \\
\textit{Novel integrated strategies for worldwide mycotoxin reduction in the food and feed chains}

6) FP7-KBBE-2008-2B general topic \textit{NTB-IMPACT} \\
\textit{Assessment of the impacts of non-tariff barriers - NTB on the competitiveness of the EU and selected trade partners}

7) FP7-KBBE-2008-2B, SICA – Black Sea, \textit{BaSeFood} \\
\textit{Sustainable exploitation of bioactive components from the Black Sea Area traditional foods}

8) FP7-KBBE-2008-2B, SICA – co-ordinated call, \textit{PLAPROVA} \\
\textit{Plant Production of Vaccines}

9) FP7-KBBE-2008-2B, SICA – co-ordinated call, \textit{IRENE} \\
\textit{In silico Rational Engineering of Novel Enzymes}

10) FP7-KBBE-2008-2B, SICA – (Russia), \textit{FORESTSPECS} \\
\textit{Wood Bark and Peat Based Bioactive Compounds, Speciality Chemicals, and Remediation Materials: from Innovations to Applications}

11) FP7-KBBE-2008-2B, CSA -Mandatory TC, \textit{BIO CIRCLE} \\
\textit{Creating a CIRCLE by extending the BIO NCP network to Third Country NIPs}
PARTICIPATION of Third Countries in selected projects - 2007-2008

Results of the systematic work started to bring fruit

RUSSIA ranks n°1
Russian-German Forum

NOVEMBER 12, 2009
Moscow,
RUSSIAN ACADEMY OF SCIENCES,
LENINSKIY PROSPECT, 32

Forum Themes:

- Co-project ‘German-Russian Cooperation Network Biotechnology’: achievements, problems and perspectives.
- Innovative clusters and technoparks - the basis of the Knowledge-based Bioeconomy
- Integrated Biorefinery - new challenges and new opportunities
- Technological platform “Industrial Biotechnology” (Russia) and Cluster Industrielle Biotechnologie (CLIB) 2021 (Germany) - international co-operation in the Common European Space.
- ERA-IB: Industrial biotechnology for Europe
Good luck in FP7!

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