

# Prospects of bioeconomy in the Russian Federation



National Technology Platform  
*Bioindustry and Bioresources - BioTech2030*

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# Recent Bioeconomy initiatives



## NATIONAL BIOECONOMY BLUEPRINT



Innovating for Sustainable Growth:  
A Bioeconomy for Europe

Brussels, 13.02.2012



Bioeconomy in Action.  
Policy conference

Axelborg, Copenhagen 26.03.2012

## State Coordination Program for the Development of Biotechnology in the Russian Federation until 2020 (BIO-2020)

approved by the Prime Minister of the  
Russian Federation  
on April 24, 2012

УТВЕРЖДАЮ  
Председатель Правительства  
Российской Федерации



« 24 » апреля 2012 г.  
№ 1853п-П

# Main competitive advantages of Russia

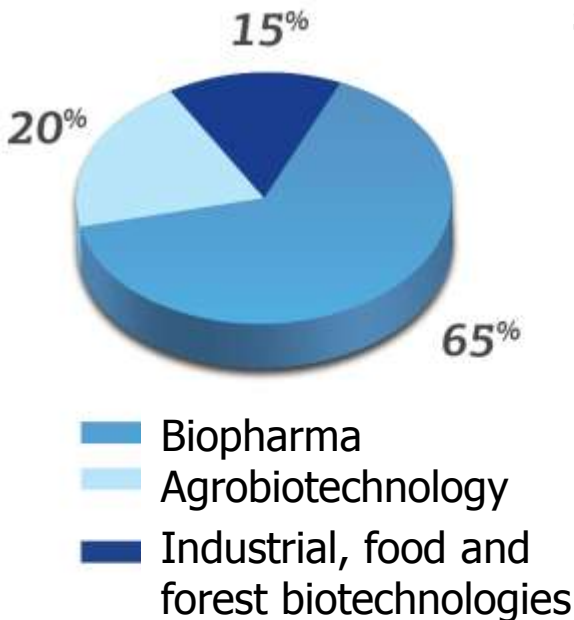
- Oil and gas
- Mineral resources
- **Forestation, 1180 mln.ha**
  - 20 % of world's forest resources
  - 50 % of coniferous forests
- **Land (fertile, arable)**
  - 10% of arable land, 195 mln.ha
  - 60% of most productive world black soils are located in Russia and Ukraine
  - About 20 mln.hectars of arable land are temperately out of agricultural production
  - Grain harvest ~100 mln.t, projected surplus up to 30 mln.t
- **Water**
  - water resources, 30,000 m<sup>3</sup> per capita
  - irrigated land, 86,000 m<sup>2</sup> per capita
- **BIOMASS**



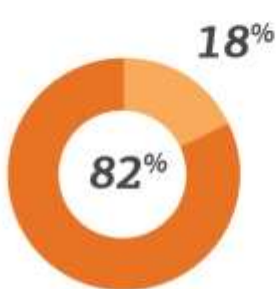
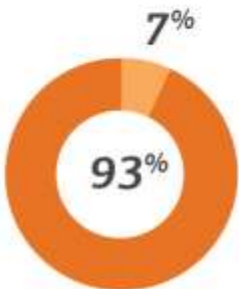
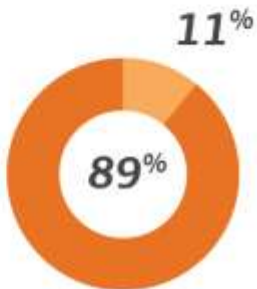
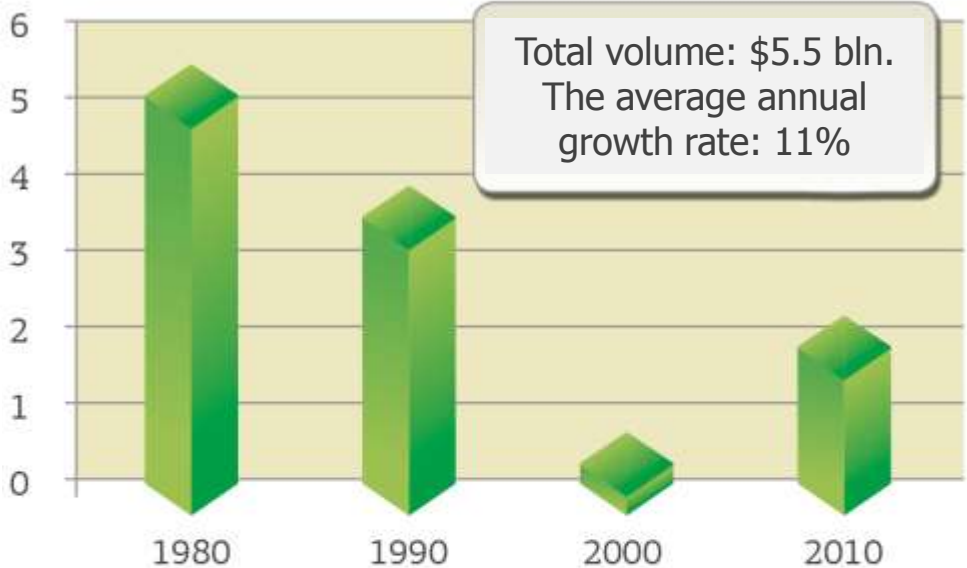
# What is biotech/bioeconomy for Russia?

- Modernization of the economy
- Sustainability
- Social benefits
  - New jobs
  - Counteracting depopulation
    - Stabilization of rural population
    - Easing social problems in distant and/or isolated cities/areas
- Strategic challenges
  - Vast territory of Russia and unlimited resources of renewable biomass
  - **Possible devaluation of traditional markets and major export products due to substitution by the products obtained from renewables**
  - Securing food and drug security, substitution of imports of major biotech products with local production

# Biotechnology in Russia



Share of the Russian Federation in the global biotechnology market, %



**Imports**  
**85%**

Biopharma      Agro biotechnology      Industrial biotechnology



# BIO-2020 main goals

- To initiate bioeconomy development in Russia
- To support new economy segments associated with industrial biotechnology
- Important changes in legislation and standards
- To stimulate and develop already existing priority market segments for biotech products - agrobio, food

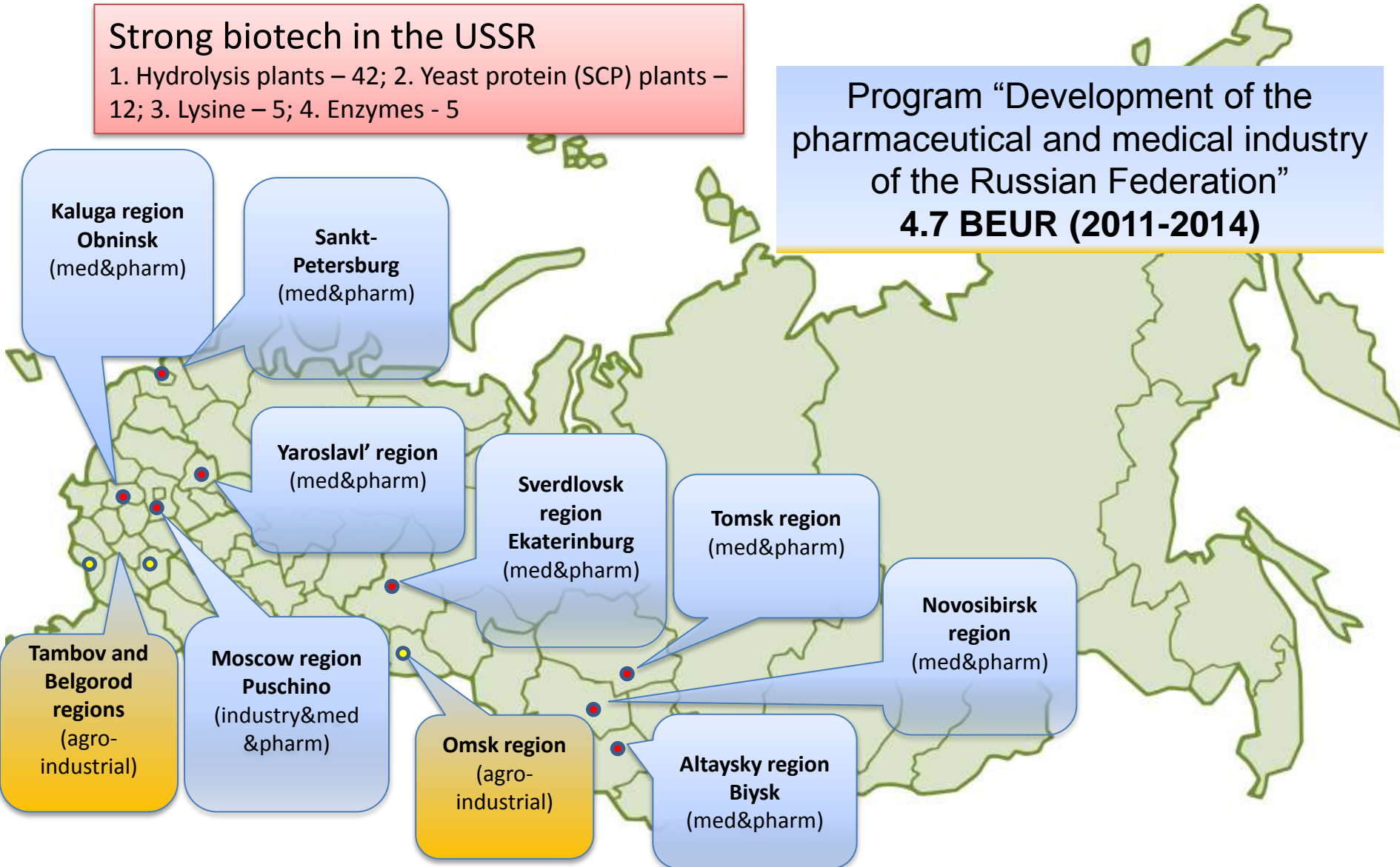
**The strategic goal is the level of bioeconomy ~ 1 % of GDP by 2020, and ~3 % of GDP by 2030**

# The map of main Russian bio clusters

## Strong biotech in the USSR

1. Hydrolysis plants – 42; 2. Yeast protein (SCP) plants – 12; 3. Lysine – 5; 4. Enzymes - 5

Program “Development of the pharmaceutical and medical industry of the Russian Federation”  
**4.7 BEUR (2011-2014)**



# Areas with highest chances of success

## Industrial biotechnology for agricultural biotechnologies

- Fodder additives, including enzymes and amino acids
- Biofertilizers
- Plant-protecting agents

## Industrial biotechnology for environment protection

- Biodegrading agents (oil spills, etc.)

## Agricultural biotechnology

- Vaccines
- Test systems

## Biogas

## Forest biotechnology

- Pulp-and-paper plants: waste treatment, chlorine-free bleaching
- Conversion of lignocellulosic raw materials
- Pellets

## Food biotechnologies

- Integrated processing of food raw materials
- Probiotics
- Leavens

## Treatment of wastes from

- Agriculture
- Timber processing
- Food processing industry

**No biofuels**



# Recent positive trends

- On Nov 27 State Duma (Parliament) will hold a special session dedicated to legislation in biotechnology
  - A list of required laws, legislative measures, acts, etc. is to be prepared for consideration
- A gap in legislation will be soon closed enabling GMO release into the environment
  - Opens route to planting transgenic crops in Russia
- A high-level presidential commission is to be established overlooking BIO-2020 implementation

# Conclusions & Challenges

- Bioeconomy in Russia is still in the state of infancy, however, over the last year dramatic changes occurred on the Russian biotech landscape
  - Technology platforms formed
  - BIO-2020 drafted and endorsed
- Systematic change of the legislation required
- Stimulation of biotech businesses, creation of markets
  - Active state procurement policy to develop markets for biotech products
- BIO-2020 should make a transition from the “letter of intent” state to a working program
- Big business (local and foreign) should come into play and show commitment to biotech development
- **How serious and far-reaching is the commitment of the Federal Government to the bioeconomy**



The future is green!

[www.biotech2030.ru](http://www.biotech2030.ru)