



The first higher technical educational institution in Russia

**Saint Petersburg Mining  
University of Empress Catherine II**

Founded in 1773



**Public and professional  
community of Russian universities  
Nedra Consortium**

**Consortium of Universities «NEDRA» is the driver of the Russian-  
African cooperation in the sphere of science and engineering  
education**

**Novikov S.V.** - Vice-Chairman of the Presidium of the  
Consortium of Universities «NEDRA», Vice-  
Rector

Russia, Saint-Petersburg 26.07.2023



# CONSORTIUM OF UNIVERSITIES «NEDRA»

Established by the Order of the Ministry of Science and Higher Education

Chairman of the Bureau



V.S. Litvinenko - Rector of Saint Petersburg Mining University

Bureau of the Consortium (14 leading universities of Russian engineering education)



Consortium "NEDRA" includes 111 universities of Russia



**OUR GOAL** – *IS NOT ONLY TO ELIMINATE THE SHORTAGE OF ENGINEERS, SCIENTISTS AND TEACHERS, THAT IS CREATING A THREAT OF TECHNOLOGICAL BACKWARDNESS OF RUSSIA, BUT ALSO TO CREATE PREREQUISITES FOR EFFECTIVE PATRIOTIC AND SPIRITUAL EDUCATION OF STUDENTS. THIS IS A NECESSARY CONDITION FOR PRESERVING THE CIVILIZATIONAL IDENTITY OF OUR COUNTRY*

*V.S.LITVINENKO*



**Objectives  
and  
Functions**

- developing a consolidated position of the Consortium on key issues of interaction with the international scientific and educational community
- participation in the development and implementation of social and economic innovation policy of the state

**KEY DECISION IN EDUCATIONAL POLICY 2023 :**

**1** May 12, 2023  
Extended Consortium Meeting with Legislative Authorities and Ministry of Science and Higher Education

**2** STRATEGY of methodological support for radical improvement of the quality of education and application of specialists with higher technical education was approved - consolidated opinion of the majority of technical universities of Russia

**3** Support for the Strategy from regions and industrial partners:  
• 107 universities of consortium «NEDRA»  
• 61 subjects of the Russian Federation,  
• 44 state corporations and major companies.

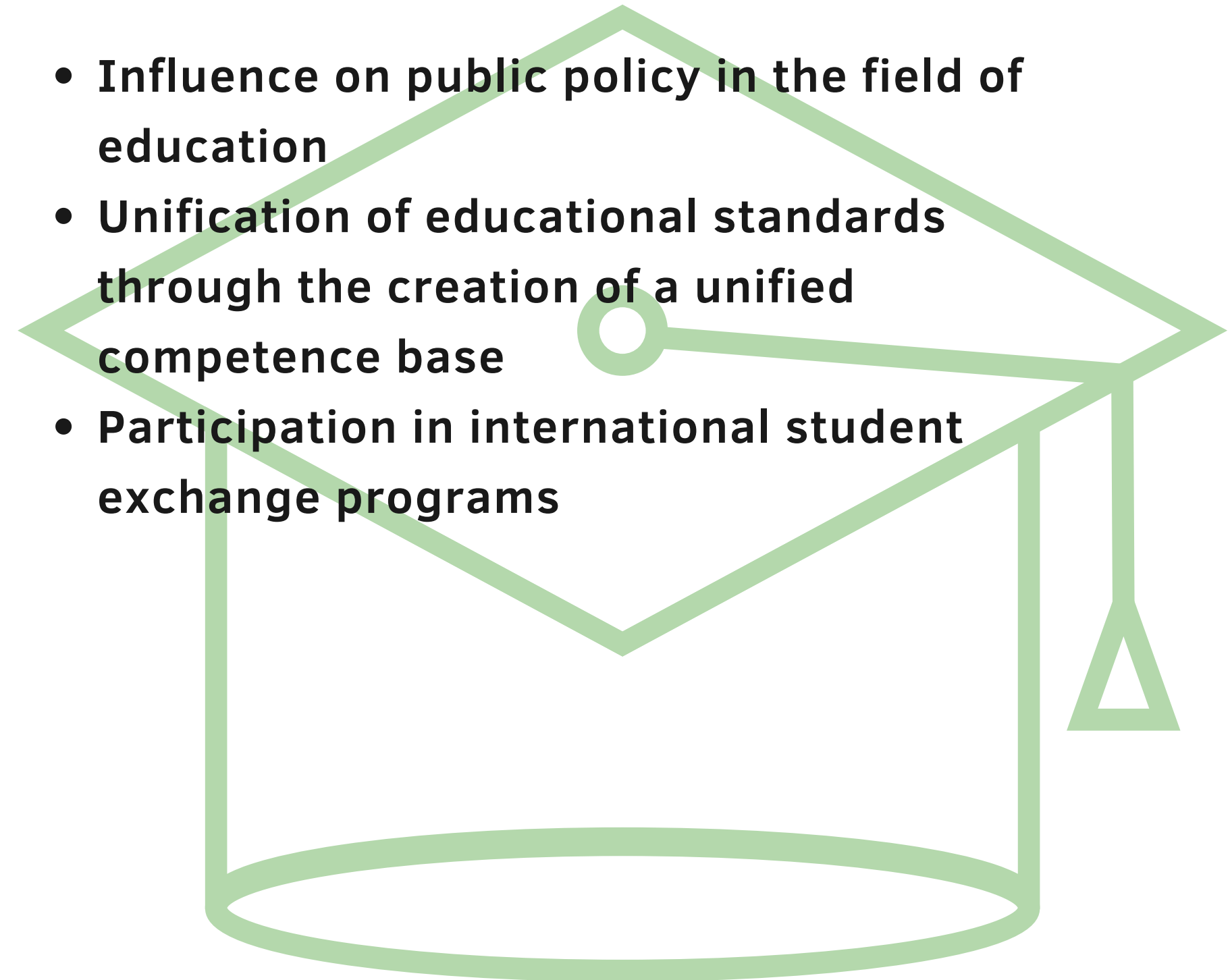
# SCIENTIFIC AND EDUCATIONAL PROJECTS

## SCIENCE

- Carrying out fundamental and prospecting research work in the field of development of the mineral and raw materials complex of the Russian Federation
- Organization of international scientific and industrial conferences
- Organization of international scientific contests

## EDUCATION

- Influence on public policy in the field of education
- Unification of educational standards through the creation of a unified competence base
- Participation in international student exchange programs

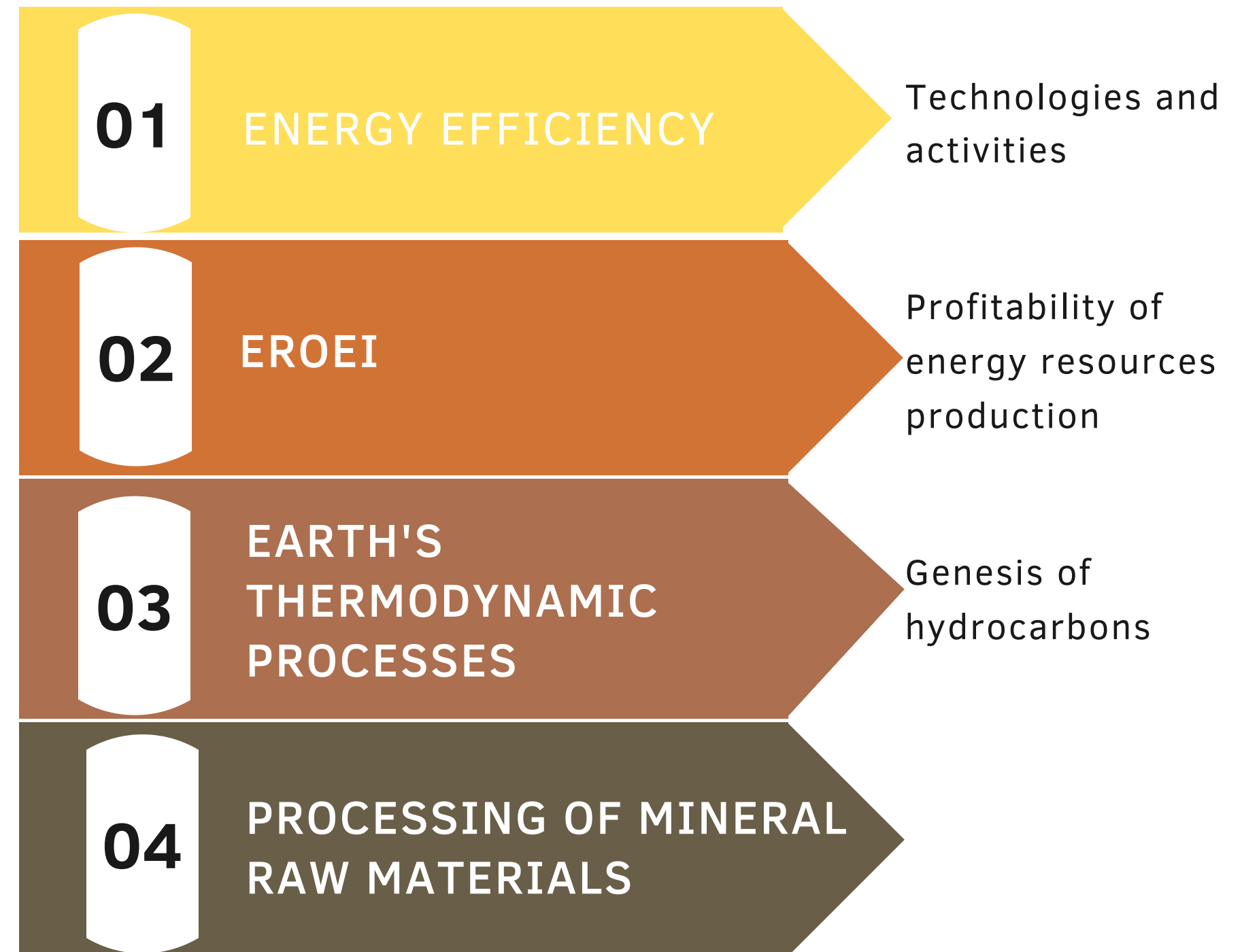


# GRANT SUPPORT PROGRAM OF THE "NEDRA" CONSORTIUM OF UNIVERSITIES

## Support types:

- Targeted support of productive employees of scientific centers (laboratories) with significant fundamental and applied research through co-financing of their salaries
- Creation of fundamental and applied scientific developments with a high level of technological readiness
- Support for postgraduate students in the Program of Basic Scientific Competencies with the obtaining of the qualification "Researcher" (certificate)

## Priority directions:



# EVENTS WITH THE PARTICIPATION OF REPRESENTATIVES OF THE UNIVERSITY CONSORTIUM "NEDRA" UNDER THE AUSPICES OF THE RUSSIAN COMMISSION FOR UNESCO



Popularization of engineering education among school students mentored by universities of the Consortium
















Work with students and young scientists of the Consortium's universities

**TOTALS FOR PARTICIPATION IN ACTIVITIES DURING THE CURRENT SCHOOL YEAR: > 2,000 participants in the events**  
 21 countries - international students of the Consortium's universities

Всего представителей вузов Консорциума из 21 страны		
RU		Россия
BG		Болгария
VI		Бурунди
VN		Вьетнам
GN		Гвинея
EG		Египет
IQ		Ирак
IR		Иран
KZ		Казахстан
CN		Китай
CG		Республика Конго
CU		Куба
LB		Ливан
MR		Мавритания
MN		Монголия
MM		Мьянма (Бирма)
NG		Нигерия
SN		Сенегал
TR		Турция
UZ		Узбекистан
LK		Шри-Ланка

# YOUTH POLICY OF THE NEDRA UNIVERSITY CONSORTIUM




	 <b>EDUCATION</b>		 <b>SCIENCE</b>		 <b>UPBRINGING</b>
	International short-term educational programs in the "Summer Schools" format		<u>Work with school students</u> on popularization of engineering education through scientific events		<u>Flash mob</u> "We don't abandon our own"
	International educational programs of "triple" diplomas		<u>Work with university students</u> and postgraduates of the Consortium's universities		<u>International Youth Movement "Voice of Students"</u>
	The German Academic Exchange Service (DAAD)		<u>Work with young scientists</u> of the Consortium's universities		Flash mob of Nedra Consortium students "Results of the Scientific Year"









The XIX International Forum-Contest of Students and Young Researchers

## TOPICAL ISSUES OF RATIONAL USE OF NATURAL RESOURCES

MAY 22 – 26, 2023, SAINT PETERSBURG



ужения образцов в  
вний с рекомендациями  
ISRM

Значения коэффициентов интенсивности  
вычислялись по формулам:

$$K_{IC} = \frac{3SP}{2tW^2} \sqrt{\pi a} F_1(\alpha)$$

$$\alpha = a/W$$

$$F_1(\alpha) = \frac{1,99 - \alpha(1 - \alpha)(2,15 - 3,9\alpha + 2,7\alpha^2)}{(1 + 2\alpha)(1 - \alpha)^{3/2}}$$

P – прикладываемая нагрузка; S – расстояние между  
опорами; W – высота образца; t – ширина образца; a –  
глубина пропила





# КОНСОРЦИУМ УНИВЕРСИТЕТОВ «НЕДРА»

## #Своих не бросаем



Альметьевский государственный нефтяной институт



Уфимский государственный авиационный технический университет



Ухтинский государственный технический университет



Санкт-Петербургский горный университет



Северо-Кавказский горно-металлургический институт (государственный технологический университет)



Кузбасский государственный технический университет им. Т.Ф. Горбачева



Грозненский государственный нефтяной технический университет имени академика М.Д. Миллионщикова



Санкт-Петербургский горный университет



## **FINAL DECLARATION**

**«TOGETHER WE ARE PROGRESS AND A FORCE  
TO BE HEARD BY POLITICIANS!  
THE STUDENT VOICE MATTERS»**



# **GLOBAL CHALLENGES OF THE "NEDRA" CONSORTIUM IN THE NEAR FUTURE**

- **Implementation of the Methodological Support Strategy for radical improvement of the quality of preparation and utilization of specialists with higher technical education**
- **Development of a School Quality Improvement Strategy "School preparation for higher technical education"**
- **Creation and implementation of a unified rating system for universities of the Consortium**
- **Formation of a unified base of academic community experts from among the universities of the Consortium and its partners, including those from friendly countries of the CIS, BRICS and SCO**
- **Reaching the SCO and BRICS level**



# ECONOMIC POTENTIAL OF RUSSIA AND AFRICA

## RUSSIA



## AFRICA



# RUSSIA-AFRICA

## In the mid-1980s:

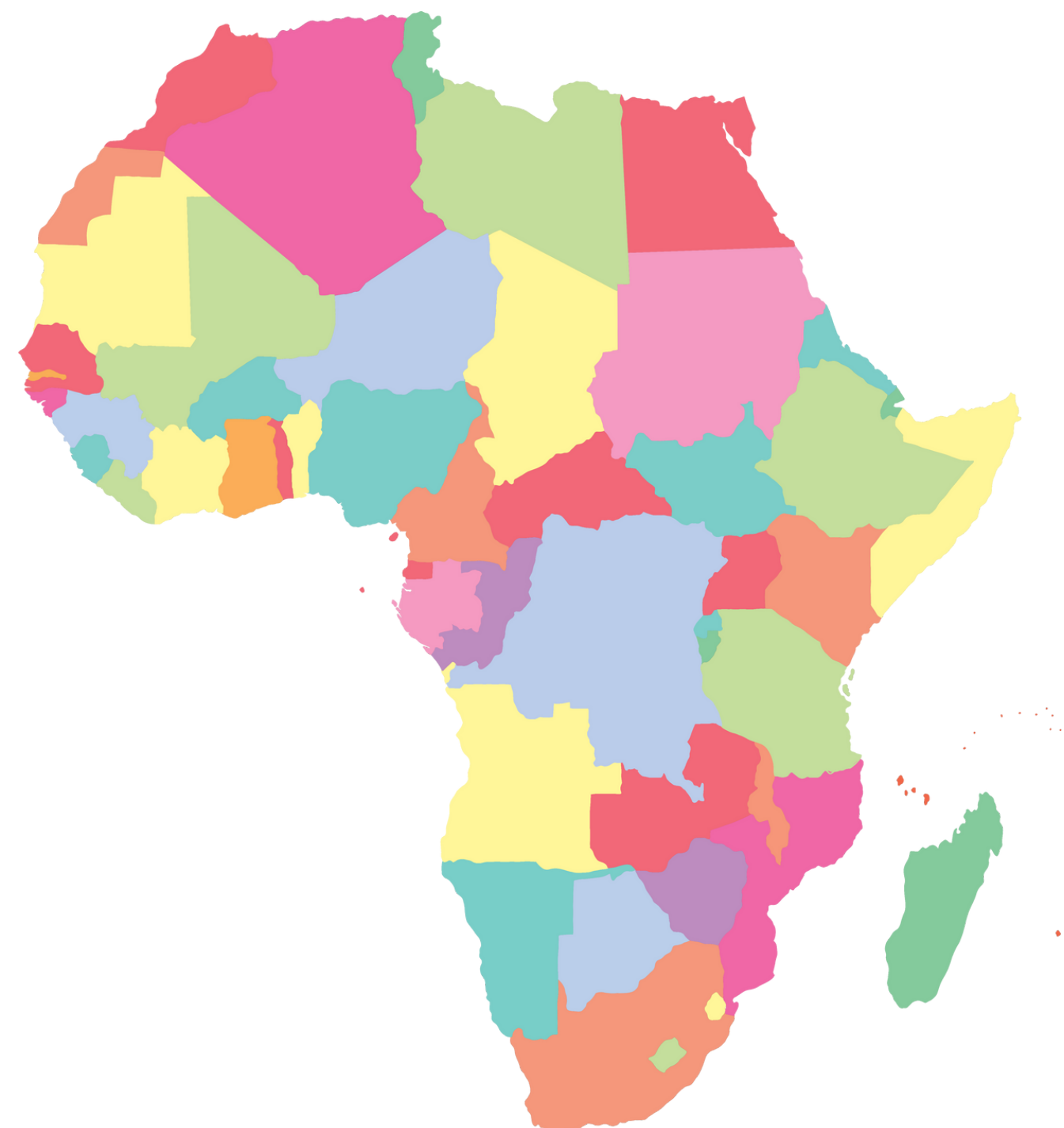
- 330 industrial, 155 agricultural, about 100 educational facilities were built in Africa, including 10 universities and 80 secondary and vocational schools;
- 480,000 Africans were professionally trained, including 250,000 in centers established by the USSR in African countries;
- During construction and operation of facilities more than 150,000 local workers and specialists were trained;
- More than 80 thousand Africans were provided with education in higher educational institutions of Russia (USSR);
- Major scientific expeditions to Africa were conducted and scientific centers were established

## Now:

- More than 35,000 African students are studying in Russian universities
- Quotas for African students in 2023/2024 have been decided to increase more than twice as much as the current year, from 2,300 to 4,700 places.
- The most popular specialties for African students are: oil and gas, construction, economics, medicine, international relations, agronomy, information and communication technologies and communication systems.



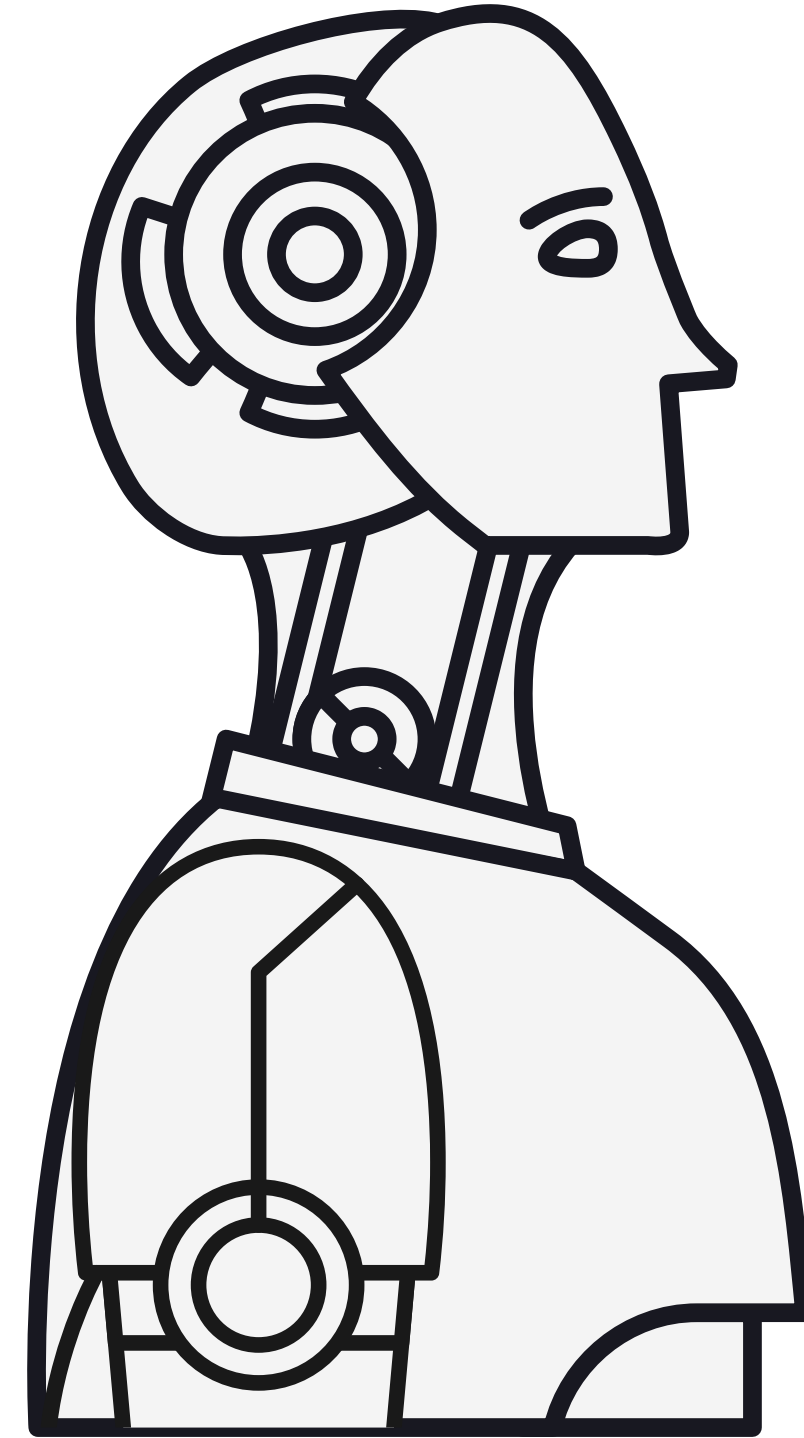
# RUSSIAN INDUSTRIAL COMPANIES IN AFRICA (PARTNERS OF THE CONSORTIUM OF UNIVERSITIES «NEDRA»)



*Cooperation in the fields of: nuclear energy, fertilizer production, diesel locomotive and railcar manufacturing, interwell radio wave and seismic rock surveying, pipeline diagnostics and oil tank protection, aerial photography and magnetic surveying, cloud data storage and editing.*

# MAIN DIRECTIONS OF TECHNOLOGICAL COOPERATION

- Improvement of existing industrial infrastructure;
- Development of the transportation and logistics system;
- Participation in the creation of energy infrastructure;
- ICT development, cyber security, space cooperation;
- Providing for the necessities of human life (agricultural sector, water supply, housing construction, etc.)





# THE MAIN DIRECTIONS OF SCIENTIFIC AND TECHNOLOGICAL COOPERATION WITH THE UNIVERSITIES OF THE NEDRA CONSORTIUM

- Energy efficiency of production in the mineral and raw materials complex
- Processing of mineral raw materials
- Modern mining technologies
- Integrated development of oil and gas fields and transportation of hydrocarbon raw materials
- Climatic changes, environment protection activities and principles of sustainable mining development
- Modern technologies of construction of buildings, structures and objects of mineral and raw materials sector
- International diplomacy in the field of mineral and raw materials complex
- Aerospace activity
- IT-technologies
- Economics and social sphere
- ESG (Environmental, Social, Governance)
- Development of modern medicine



# **ACHIEVEMENTS OF AFRICAN COUNTRIES IN THE SCIENTIFIC AND EDUCATIONAL SPACE**

- **The share of science spending in Africa in total global science spending has increased from 0.65% in 2000 to 1.7% in 2019**
- **Africa's average share of science spending in GDP is 0.4% Many countries have established research funding foundations**
- **In terms of publication activity ratio in top journals, Africa's share from 2000 to 2020 increased from 0.12% to 0.24%, and in terms of the number of articles increased 5 times**
- **African scientists perform most strongly in agricultural sciences, immunology, ecology, microbiology, earth sciences, humanities**
- **In 2023, the TimesHigherEducation (THE) ranking includes 97 universities from 17 African countries. In comparison with last year, 25 more African universities have appeared on the list of the best universities**
- **Among the first 500 universities in the world according to THE, 10 universities from Africa were recognized**
- **Universities have made significant efforts to reach world-class standards by including this objective in their strategic development goals**

**SCIENCE**



**EDUCATION**

**INDUSTRIAL**

**CONSORTIUM  
"NEDRA OF AFRICA"**

**YOUTH**

RUSSIAN AFRICAN PARTNERSHIP CONSORTIUM



**Q**

**WHY SHOULD THE RUSSIAN-AFRICAN CONSORTIUM OF UNIVERSITIES "NEDRA AFRICA" BE ESTABLISHED?**

**A**

- **ASSISTANCE TO THE SUSTAINABLE DEVELOPMENT OF AFRICA THROUGH THE EXCHANGE OF KNOWLEDGE, EXPERIENCE AND JOINT RESEARCH.**
- **IMPROVING THE QUALITY OF EDUCATION AND SCIENTIFIC POTENTIAL IN THE REGION.**
- **STIMULATING INTERCULTURAL EXCHANGE OF STUDENTS AND PROFESSORS.**
- **ATTRACTING INVESTMENTS AND RESOURCES FOR THE DEVELOPMENT OF EDUCATION AND SCIENCE IN AFRICA.**
- **STRENGTHENING DIPLOMATIC TIES AND INTERNATIONAL INFLUENCE OF RUSSIA AND THE COUNTRIES OF AFRICA.**

**CHATGPT**

THANK YOU FOR YOUR

ATTENTION

RUSSIA AFRICA