



TASHKENT INSTITUTE OF
CHEMICAL TECHNOLOGY

Performance of green economic development and achievements in sustainable development goals

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TICT AS A CENTER FOR INNOVATION AND TECHNOLOGIES

MAIN CHARACTERISTICS

- 5** FACULTIES
- 24** DEPARTMENTS
- 6** CENTERS
- 2** TECHNICIUM, LYCEUM
- 2** BRANCH

DIRECTIONS OF TRAINING AND SPECIALTIES

BACHELOR – 16

MASTER'S DEGREE – 20

DOCTORAL STUDIES (PhD) – 16

DOCTORAL STUDIES (DSc) – 8

DOUBLE DIPLOMA

4

- REPUBLIC OF BELARUS**
Belarusian State Technological University
Belarusian State University of Food Production
Polotsk State University
- TURKEY**
Ostim Technical University
- REPUBLIC OF LATVIA**
Latvian University of Natural Sciences and Technologies
- HUNGARY**
Debrecen University

PROFESSOR AND TEACHING STAFF

427

- Under 30
- 30-40
- 40-50
- 50-60
- Older 60

Scientific potential

52%

12,6%
57

DSc

39,6%
150

PhD

31,0%
165

Associate prof.

36,7%
216

Senior lecturer

42,0% (187) women

58,0% (260) men

STUDENTS

TOTAL NUMBER OF STUDENTS

8 100+

BACHELORS

7900+

MASTER'S DEGREE

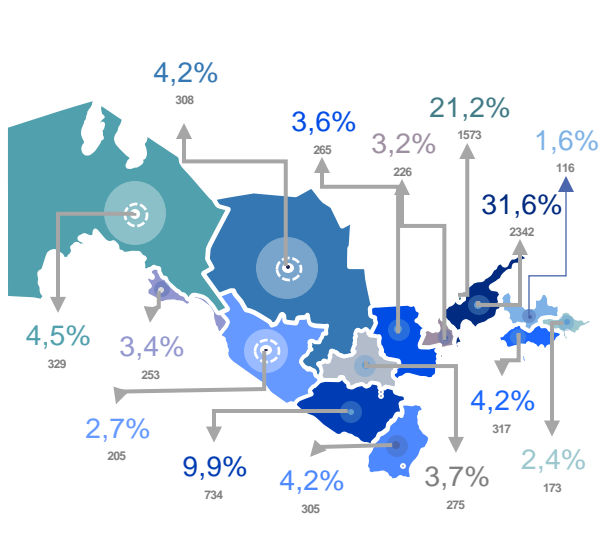
120+

DOCTORATE (PhD)

100

DOCTORATE (DSc)

12



INTERNATIONAL ACTIVITY

100+

International agreements with foreign universities and organizations

40

Teaching staff who completed an internship abroad (annually)

4

Joint doctoral students

30

Foreign teachers involved in the educational process

20

Foreign citizens who have completed an internship

15

Foreign students

5

Foreign specialists working on a permanent basis

International projects

100 000 \$

China
Project "In the intellectual process of modified asphalt production, together in the intellectual process of modified asphalt production"

600 000 \$

MUNIS
"improvement of quality indicators of agricultural products through the development of optimized smart packaging (OSP) containing antibacterial substances."

8 000 \$

TANDEM
Project "Creation of institutional forms of cooperative higher education in the field of food technology"

114 000 eur

[GIZ]
Professional Development of Teachers in Central Asia for Sustainable Training in Food technologies

3 000 \$

[GIZ]
Project "Practical studies in the field of food technology"

717 355 eur

"101083216 – ECAMPUZ European World Talent Camp for Uzbekistan Scientists in Food Science and Technology – ERASMUS-EDU-2022-SBE"

MISSION AND TARGET MODEL OF THE TASHKENT INSTITUTE OF CHEMICAL TECHNOLOGY IN THE DEVELOPMENT STRATEGY OF HIGHER EDUCATIONAL INSTITUTIONS OF THE REPUBLIC OF UZBEKISTAN

PHILOSOPHY

Institute with a vision for the **green** future

TICT – is a basic University for the chemical, food, construction materials, oil and gas processing industries, as well as other industries

- Leading University for the Development of Green Economy Networks
- **90%** of employees of enterprises in the food, chemical, construction materials, oil and gas processing industries are graduates of the TICT
- **10+** technologies per year are developed at TICT for the chemical, oil and gas processing industries
- TICT – is the operator of high-tech industry development roadmap «**Technologies of new materials and substances**»

Target Model TICT

- «**Green educational institution**» – leader in the field of SDG
- **Leader in areas:** green chemistry, food safety, meat and milk technology, chemical technology, oil and gas chemistry, food technology, biotechnology, chemical technology of building materials, industrial ecology
- **Coordinator** of chemical and technological education in the Republic of Uzbekistan
- **Open Digital Institute**



On September 2015, the 193 countries of the **UN General Assembly** adopted the 2030 Development Agenda titled "Transforming our world: the 2030 Agenda for Sustainable Development."

17 Goals, 69 Targets, 232 Indicators

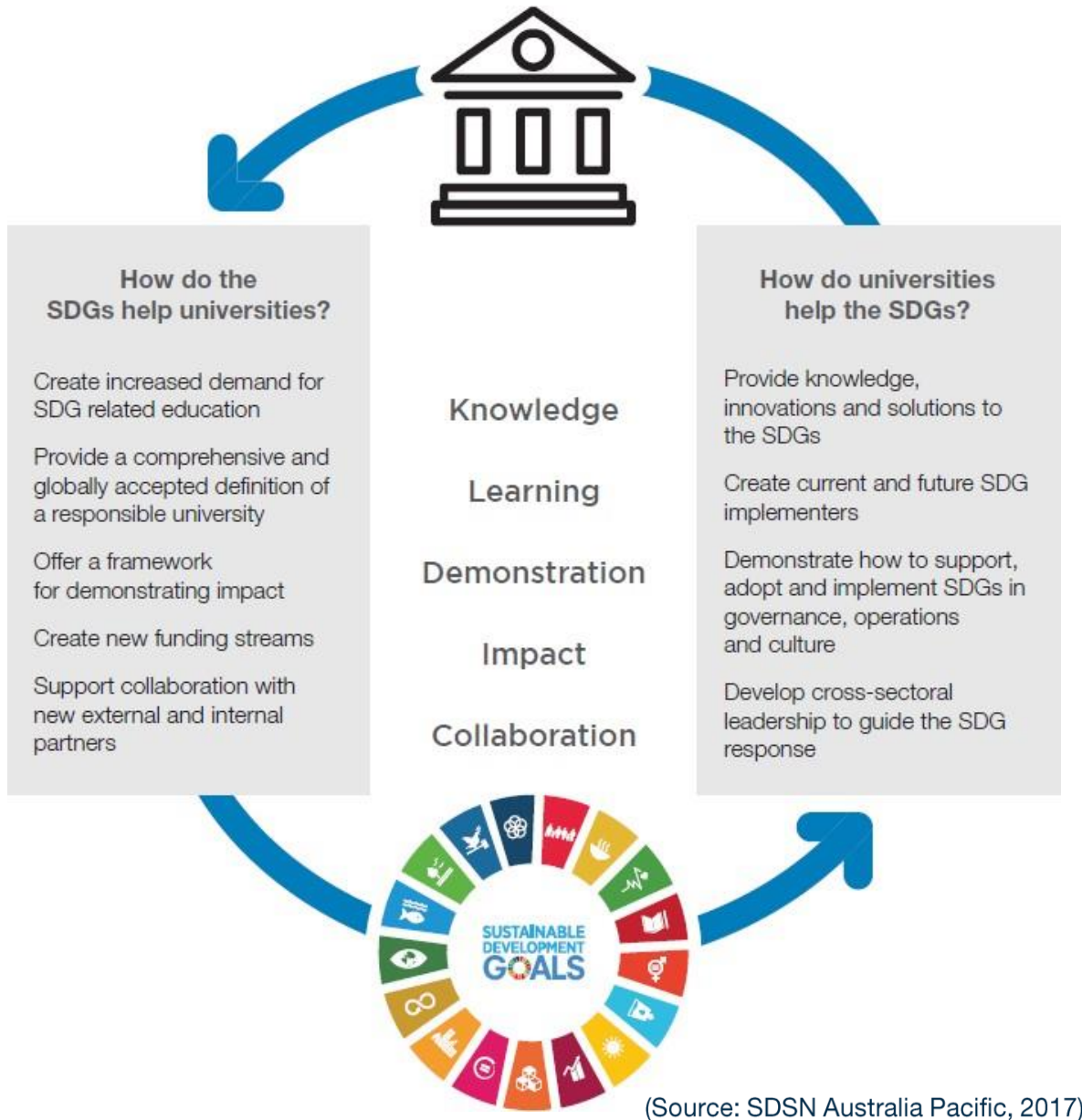
Goals are important for translating the general Concept of sustainable development into tangible details.

Targets and **indicators** are important for assessing and measuring progress.

Goals, targets and indicators are essential for envisioning the future, developing transition pathways and strategies, turning strategies into policies and plans, guiding implementation, monitoring progress, and learning from results

In order to organize systematic work on the implementation of sustainable development goals for the period up to 2030 in the **Republic of Uzbekistan**, on **October 20, 2018**, the **Cabinet of Ministers** approved **16 national** sustainable development goals and related **125 tasks**

Universities role for sustainable development



Universities' sustainability transition could be effective only when the management focuses on all the policy-blades boosting sustainability transition:

- The built-environment quality improvement
- The civil society engagement
- The industry partners' involvement
- The public institutions support and collaboration in policies implementations



Source: Sonetti, Lombardi, Chelleri, 2016

Universities' role for sustainable development & why universities need SDG



RESEARCH

Provide the knowledge and solutions to underpin the implementation of SDGs



EDUCATIONS

Creating current and future SDGs implementers



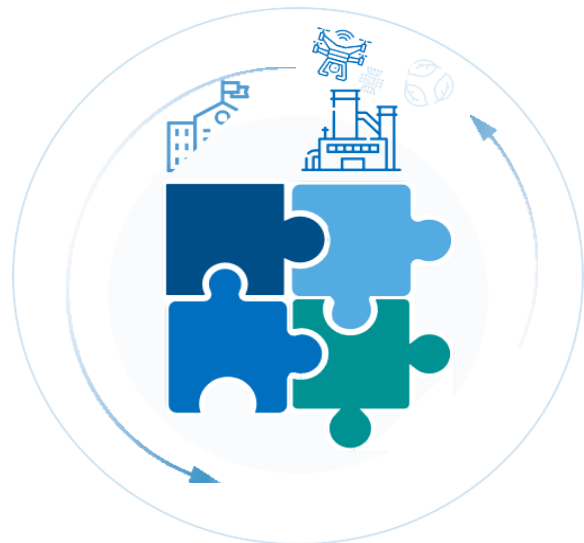
OPERATIONS

Embodying the principles of the SDGs through organizational governance, operations and culture



EXTERNAL LEADERSHIP

Providing cross-sectoral leadership in implementation



- ✓ Demonstrating university impact
- ✓ Capturing demand for SDGs-related education
- ✓ Building new external in internal partnerships
- ✓ Accessing new funding streams
- ✓ Adopting a comprehensive and globally accepted definition of a responsible and globally aware university

Why do we need chemistry?

- “
- ✓ We need chemistry to advance the [UN] Agenda for Sustainable Development until 2030.
 - ✓ We need chemistry to eradicate poverty.
 - ✓ We need chemistry to promote health.
 - ✓ We need chemistry to mitigate the effects of climate change.
 - ✓ In a word, we need chemistry for human rights and dignity, so that no one is left behind.
 - ✓ Not just chemistry...
 - ✓ We need green chemistry... sustainable chemistry... chemistry that respects the boundaries of the planet... chemistry that is inclusive, working for the benefit of all... Indeed, the modern world needs green chemistry more than ever”



Dr. Botir Usmonov
International scientific week "Green
Chemistry and Sustainable Development"
May 27, 2023



How TICT contributes to SDGs



1.4. TICT graduates are job creators



2.4. Research and implementation of a sustainable food production, supply and consumption system



3.3.1. Strengthen the prevention and treatment of substance abuse (narcotic drugs and alcohol)



4.6. Integrate (for scholarships, invite students to study) students from regions of Uzbekistan, developing countries into globally relevant study and research programs



5.5. Full and effective participation of women and equal opportunities for leadership at all levels of decision-making. Support WOMEN in STEM programs, wide promotion among institute, school students



6.3. Improving water quality: (a) wastewater treatment technologies and systems; (b) responsible waste management (increasing recycling and safe re-use and eliminating landfills); (c) reducing the potential for other pollutants to enter water bodies



7.1. Development of educational programs on renewable energy resources and technologies



8.1. Development of close cooperation between institute and industry, fostering start up projects, establishment of new job places and new areas of industrial growth



Research



17.9. To contribute to the strengthening of effective and targeted capacities for the institute community, the society of Uzbekistan, helping to achieve the goals of sustainable development

In order to provide assistance to low-income and disabled youth among the population

- provide access to the global community
- direct them to a profession
- to interest them in science
- increase their social activity

The Tashkent Institute of Chemical Technology provided **50** young people with **laptops, sewing machines, wheelchairs, hearing aids, medicines** and **basic food products**.

Tuition fees of students below are paid by the institute

- graduates of orphanages;
- students deprived of parental care, taken into guardianship;
- children of an incomplete family (single mother, father);
- students with group I or II disabilities;
- children of the family included in the "single register of social protection";
- young people, one or both of whose parents are old-age pensioners;
- children of families in which two or more children study under a contract.



Research and implementation of a sustainable food production, supply and consumption system

2 ZERO HUNGER



According to UN forecasts, the world population may reach 10 billion people by 2050, and this figure complicates the task of providing the world's population with sufficient quantity and quality of food in the context of increasing degradation of agricultural lands and decreasing water resources.

2.6 billion or more than 33% of the world's 8 billion people live mainly on agriculture, while 52% of agricultural land has been severely degraded, resulting in a significant decline in soil fertility.

As a result of drought and desertification processes, 12 million hectares of land are lost annually (23 hectares per minute). However, up to 20 million tons of grain could be grown in these fields every year.

Land degradation has a negative impact on the living standards of 74% of the world's poor.

Every year, **1.3** billion tons of food worth **\$1 billion is lost** due to defects in the systems of harvesting, transportation, storage and delivery of agricultural products to consumers.



In recent years, the development of education in New Uzbekistan has become a national goal and a national movement. As a result in 2023 the title of the year was declared as “The Year of Caring for People and Quality Education” in Uzbekistan.

- ✓ Steady increase in the coverage of children aged 3–6 years by the preschool education system (from 20.8% in 2015 to 62% by 2021). By 2026, this indicator is expected to reach **80%**.
- ✓ Number of universities have increased **2.5** times to **198**, the coverage rate has increased from **9%** to **38%**





Improving water quality:

- (a) wastewater treatment technologies and systems;
- (b) responsible waste management (increasing recycling and safe re-use and eliminating landfills);
- (c) reducing the potential for other pollutants to enter water bodies





ENERGY



In 2023, **300 kW/h** solar panels were installed on the territory of the Tashkent Institute of Chemical Technology



Annual electricity consumption is covered by 100%



As a result, **20 thousand kW** of electricity is being saved in 1 year



Solar panels were installed on **2910 m²** of the existing 7410 m² space at the institute



2,000 m² of solar panels were installed in a **parking lot**



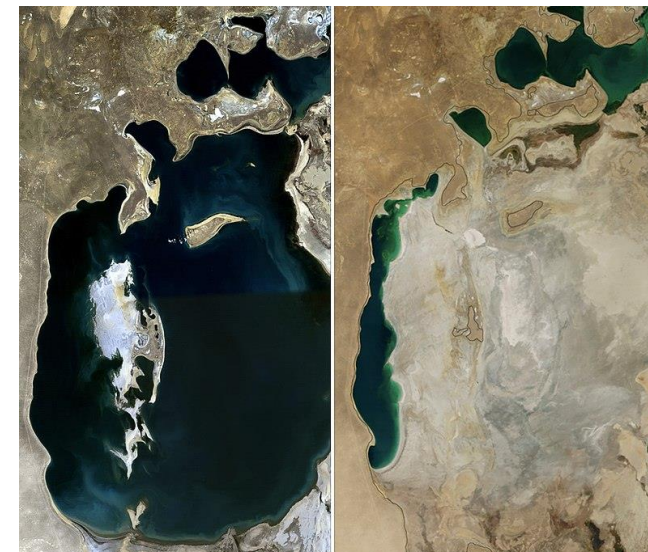


START-UP project gained by the students of the institute from

the Ministry of Innovative development of Uzbekistan to explore the Aral Sea Objects:

1. Creating a new variety of "Cherkez" and "Kandim" plants that reduce salinity and reduce erosion in the Aral Sea region,
2. Formation of an ecological system by attracting new innovative biotechnological technologies to the area,
3. Implementation of prevention of oncological, dermatological, various manifestations of hypertension, nephrological and gastroenterological diseases, which are widespread among the inhabitants of the area close to the Aral Sea and atmospheric, by restoring the ecosystem, flora and fauna of the area.

Budget: 600 000 UZS (60 000 USD)



TICT'S CONTRIBUTION TO GREEN PLANET

With the Decree of the President of the Republic of Uzbekistan dated 30.12.2021 "On measures to accelerate greening works in the Republic, more effective organization of tree protection" PF-46 national project "**Green Space**" was implemented throughout the country.

Within the framework of nationwide Green Space project, all members of the **Tashkent Institute of Chemical Technology** from the Rector to students, planted **8000 decorative** and **2000 fruit** trees.

14 hectares of land located in the Ortachirchik district of the Tashkent region was assigned to TICT as an **educational farm**. In this farm, TICT students **conduct research** and **experiments** with different plant species.



Tashkent Institute of Chemical Technology became a signatory to the UN Global Compact Principles of Responsible Management Education (PRME) in 01 April of 2020 (<https://www.unprme.org/tashkent-chemical-technological-institute>)

Institute facilitate and support dialogue among **educators, students, business, government, consumers, media, civil society** organizations and other interested groups on issues related to global sustainability

Communication activities were carried out during academic year to provide close dialogue with society, media, stakeholders and civil society organizations in several ways:

- Collaboration and dialogue with neighborhoods (meetings, companies with over than **3400 people** participation)
- meetings and activities in 5 important initiatives (**10450 participants**)
- collaboration and dialogue with schools (1000+ people)
- over **2900** participants in meetings with religious and educational organizations

PRME Principles for Responsible Management Education

an initiative by the  **United Nations**
Global Compact

17 PARTNERSHIPS
FOR THE GOALS





INTERNATIONAL SCIENTIFIC WEEK
GREEN CHEMISTRY AND SUSTAINABLE
DEVELOPMENT
MAY 27, 2023 Y. TASHKENT, UZBEKISTAN

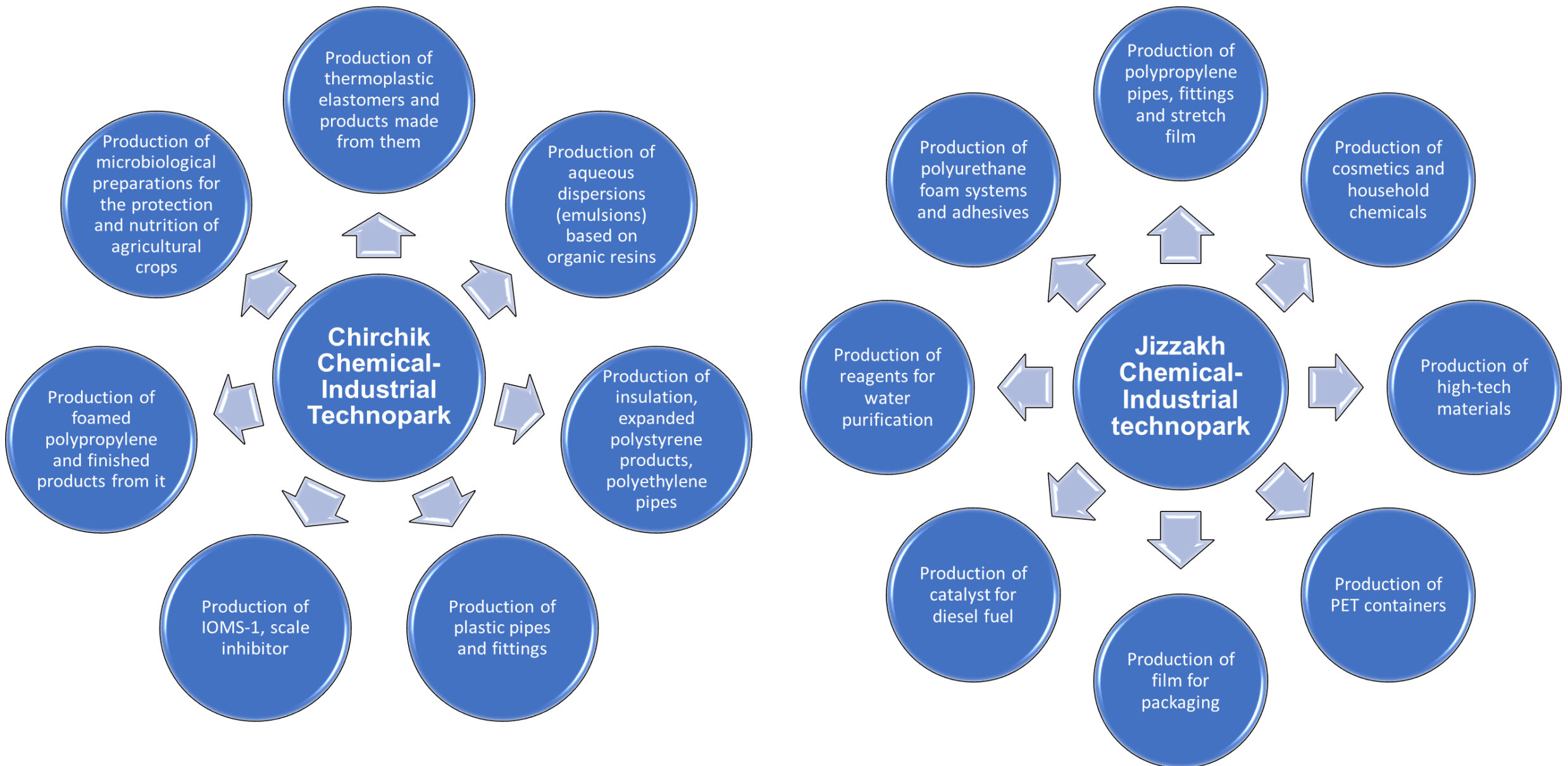
For the last 20 years, the idea of sustainable development has become the **key paradigm** for the development of modern humanity.



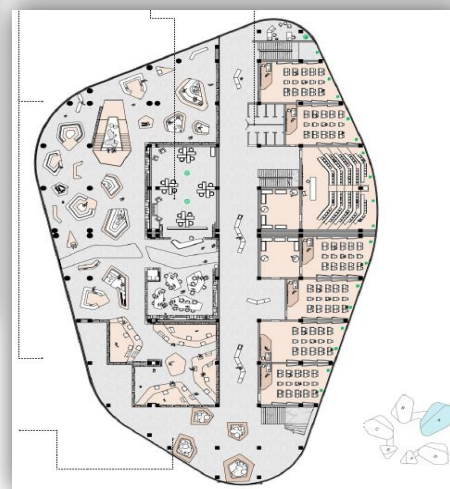
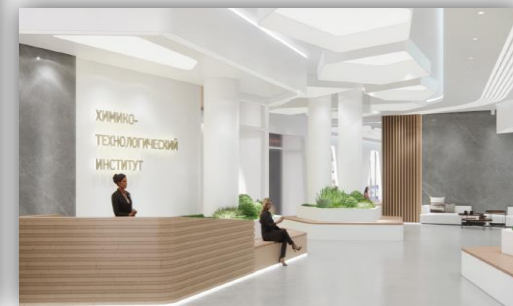
The Tashkent Institute of Chemical Technology **annually** holds an international **scientific week "Green Chemistry and Sustainable Development"**. The goal of the International Science Week "Green Chemistry and Sustainable Development" is **to ensure** the fulfillment of a number of important tasks of **the Resolution of the United Nations General Assembly No. 70** of the Summit on **Sustainable Development** of September 2015, the **organization** of systematic work on the consistent **implementation of the goals** and objectives of **sustainable development** in accordance with the Resolution of the **Cabinet of Ministers Republic of Uzbekistan No. 841** dated October 20, 2018 "On measures to implement national goals and objectives in the field of sustainable development until 2030".



INDUSTRIES' INVESTMENT FOR ECONOMIC SUSTAINABILITY



MASTER PLAN: GREEN CAMPUS – GREEN CHEMISTRY



Tashkent Institute of Chemical Technology

- Building area - 98,000 sq.m.
- Educational building - 7500 seat
- Administrative building - 7500 sq.m.
- Laboratories - 30
- Integration zones - 2500 sq.m.
- Dormitories - 1218 bed
- Housing for Academic staff – 210



Thank you for your attention!

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