

CSPU Support for Food Security and Sustainable Agriculture Knowledge Transfer to Local Farmers and Producers

CSPU plays an active role in promoting food security and sustainable agricultural education through hands-on learning platforms and knowledge-sharing initiatives. The university's integrated **"Agro-Bio-Geo-Chemistry Educational, Scientific, and Pedagogical Complex"** serves as a hub for practical training, innovation, and community engagement. This complex combines agricultural science, biology, geography, and chemistry to provide both students and local farmers with modern agricultural skills and sustainable production techniques.

Program Description:

The **Agro-Bio-Geo-Chemistry Complex** unites four main fields — Greenhouse Farming, Chemistry, Biology, and Geography — to deliver experiential learning under the principle of *"I Heard – I Saw – I Did."* This methodology ensures that learners gain not only theoretical knowledge but also hands-on experience in sustainable agricultural practices. The complex includes demonstration plots, laboratory experiments, and practical workshops designed to connect scientific theory with real-world agricultural applications.

For instance, chemistry instructors can use real laboratory models to demonstrate the periodic system of elements and molecular structures, helping participants understand how chemical balance and soil composition affect crop productivity. Geography and biology components focus on ecosystem management, soil fertility, and biodiversity conservation — all vital for sustainable farming.

Outreach to Local Farmers and Producers:

CSPU extends the benefits of this program to local agricultural stakeholders through training sessions, open workshops, and field demonstrations. Farmers and food producers from the Chirchik city and Tashkent region are invited to participate in practical activities within the greenhouse and laboratory facilities. These sessions provide exposure to innovations in **greenhouse management, soil testing, irrigation efficiency, and eco-friendly fertilizer use**, supporting regional food security goals.

Impact and Benefits:

- Strengthened collaboration between the university and local agricultural communities.
- Improved farmer capacity in sustainable agriculture, soil health management, and chemical safety.
- Practical application of modern technologies to enhance productivity and reduce environmental impact.
- Increased awareness of food security principles and the UN **Sustainable Development Goals (SDGs 2, 12, and 15)**.

Through its **Agro-Bio-Geo-Chemistry Educational Complex**, CSPU provides a vital platform for advancing food security and sustainable agriculture education. By integrating science, innovation, and community engagement, the university empowers both students and local farmers with the knowledge and skills necessary to develop environmentally responsible and resilient food systems in Uzbekistan.

CSPU actively contributes to agricultural development and food security by facilitating knowledge transfer between academia and local farming communities. Recognizing the importance of collaboration in achieving sustainable agricultural growth, the university organizes regular events that connect **local farmers, food producers, students, and researchers**. These initiatives are carried out through the **Agro-Bio-Geo-Chemistry Educational, Scientific, and Pedagogical Complex**, which serves as a key platform for applied training, scientific demonstration, and community outreach.

Program Description:

The university's events are designed to integrate scientific innovation with traditional agricultural experience. Workshops and open seminars focus on **greenhouse management, soil fertility improvement, irrigation systems, composting techniques, and eco-friendly crop protection methods**. The sessions follow the practical learning model "**I Heard – I Saw – I Did**," allowing participants to directly apply theoretical knowledge through field-based demonstrations.

CSPU's faculty members and students collaborate to prepare visual materials, experimental setups, and real-case simulations for farmers. Chemistry and biology specialists explain the effects of soil composition and plant nutrition, while geography experts highlight climate adaptation and land-use planning for sustainable cultivation.

Engagement and Collaboration:

CSPU's outreach extends to local agricultural enterprises, regional food producers, and vocational schools. Events such as **demonstration days, innovation fairs, and farmers' knowledge exchange forums** create opportunities for open dialogue between educators, farmers, and entrepreneurs. These activities promote innovation and encourage farmers to adopt modern agricultural practices and technologies. The university also partners with local authorities to align its training content with regional agricultural development programs.

Impact and Outcomes:

- Improved knowledge among local farmers on sustainable farming and efficient resource use.
- Strengthened partnerships between the university and regional agricultural sectors.
- Enhanced student engagement in community-based research and extension work.
- Promotion of environmentally responsible agricultural practices supporting national food security.

Through its outreach and educational events for farmers and food producers, CSPU demonstrates its role as a center of innovation and social responsibility in Uzbekistan's higher education system. By linking scientific research with community needs, the university advances practical solutions for sustainable agriculture and fosters inclusive growth in the region. These initiatives directly contribute to the achievement of **SDG 2, SDG 12, and SDG 15**, positioning CSPU as a key player in promoting sustainable rural development.