



**SAMARKAND STATE UNIVERSITY NAMED AFTER SHAROF RASHIDOV
(SAMDU)**

**SUSTAINABLE DEVELOPMENT GOAL 15
(SDG 15)**



SDG 15 seeks to stop and reverse land degradation, minimize biodiversity loss, combat desertification, preserve, restore, and promote sustainable use of terrestrial ecosystems. It is evident that till now, it is a known planet that sustains life for all living beings. It is clear that a healthy terrestrial life is the basis for human existence on this planet. We have all contributed to the destruction of the planet's ecology through degradation, deforestation, and the loss of natural ecosystems. Preserving biodiversity and encouraging the sustainable use of our ecosystems are not causes. It holds the secret to our survival.

We foster biodiversity at university premises and encourage people to restore land degradation, afforestation, and sustainable development all around the world. Samarkand State University named after Sharof Rashidov and its allied departments are consistently working to boost biodiversity on land. For this purpose, the university organizes many events and exhibitions to exhibit its efforts to restore biodiversity.

The problems of biodiversity have been the focus of years of work for numerous specialists and scientists. Furthermore, the faculty of biology and the faculty of geography and ecology pave the way by conducting research, teaching, and training on a wide range of environmental, land, and water-related issues.

Metrics

15.2.1 - Does your university as a body support and/or organise events aimed to promote conservation and sustainable utilisation of the land, including forests and wild land?

We are dedicated to giving the community and students the chance to learn about our campus ecosystems through outreach programs that promote social impact and practical experiences for our academic courses.

Samarkand State University has many biodiversity zones where students and teachers can go to learn about biodiversity. For example, the Botanical Garden is located outside of Samarkand city. This biodiversity zone has approximately 20 hectares of land, and shelters a variety of plants and animals. These plants are available for study and research.



We are determined to flourish the vegetation and animals without any intervention. It indicates our beliefs and actions.

Our biodiversity sites are open to all students, common people and interested stakeholders to learn from the ecosystem to maintain sustainability.

In order to penetrate the sustainability deep in our system, we organize many events and exhibitions to promote sustainable solutions across the region and worldwide. For this purpose, an innovation meet was organized by the university.

During this event, many students and researchers have come forward to solve many environmental, ecosystem, and biodiversity issues in a sustainable way.



The university and its stakeholders work with the local community for indigenous solutions to many environmental problems. For this purpose, the university cooperates with local farmers and food producers to provide them necessary skills and technology to harvest their crops in a more sustainable way.

15.2.2 - Does your university as a body have policies to ensure that food on campus is sustainably farmed?

The university promotes sustainability and preserves its culture of serving fresh and ecologically sustainable food in university-owned canteens. In order to ensure sustainability, our ethical sourcing food policy guides us through a step-by-step procedure to establish a system that calibrates our needs and demand should be fulfilled by the sustainably harvested food.



Further, the policy on sustainable procurement and purchase is publicly available.

<https://www.samdu.uz/upload/content-files/Sustainable%20Purchase%20and%20Procurement%20Policy.pdf>

15.2.3 - Does your university as a body work directly to maintain and extend existing ecosystems and their biodiversity, of both plants and animals, especially ecosystems under threat?

Department of Zoology and Botany are committed to work on increasing biodiversity. Many researchers are carrying out state of art research and developing a suitable curriculum for addressing the vulnerable species of plants and animals which were put in the endangered list. For this purpose, Samarkand State University has established many museums for teaching and research.

In 1934, the brothers S.K. and K.K. There are more than 3,000 exhibits organized by Dallar, with a history of more than 100 years. 1. Turan tiger: Turan tiger in the red book of Uzbekistan since 1954. Available only in our museum. 2. Indian elephant: died in March-April 1975 with the Moscow circus. Prepared and presented by the group led by A.K. Sagitov and L.V. Ionislar. 3. Bukhara deer, gazelle, black gazelle, black and brown bears, snow bears, wild boars. 4. The rarest Turkmen eublefars in the red book of Uzbekistan, gray goats. 5. Among the best fur-bearing animals of Uzbekistan: beaver, Central Asian fox. 6. Samples of American crocodiles. 7. Birds: White-headed grebe, osprey, white-tailed water eagle, black-tailed godwit and woodpecker. Among our beautiful birds: Indian peacock, several types of Zarafshan pheasants, red goose, white storks, black storks, white and gray coots.



This museum has its own variety of samples. It shows wonderful depictions of animals, birds and desert animals. These animals and their samples are preserved, maintained and displayed for

training and teaching. These natural samples of animals are having scientific importance as well as historical perspectives.



Further, our researchers also work on different biodiversity issues. For example, many workers are working on Zarafshan biodiversity, rangeland degradation and solutions.



15.2.4 - Does your university as a body offer educational programmes on ecosystems (looking at wild flora and fauna) for local or national communities?

Samarkand State University offers more than 50 educational programs for bachelor, master, and Ph.D. students about wildlife including flora and fauna. These courses are dominantly run by the faculty of geography and ecology, faculty of biology, and faculty of chemistry. The Institute of Agro-biotechnology also offers many courses attributed to flora and fauna. It shows the university's commitment to sustainability. We also encourage the national and international community by conducting a state of the art research on biodiversity and sustainability.

We also provide meaningful information about the flora and fauna of the Republic of Uzbekistan and are available at:

1. www.ziyonet.uz;
2. www.naukaran.ru;
3. www.maik.ru;
4. www.rusplant.ru;www.floranimal.ru.
5. www.catuzmu
6. www.nature.uz
7. www.pedagog.uz
8. www.mail.ru
9. <http://www.biologyjunction.com>
10. <http://images.botany.org/>

15.2.5 - Does your university as a body offer educational programme/outreach for local or national communities on sustainable management of land for agriculture and tourism?

Continuous educational outreach program for local and national communities on agriculture and agro-tourism by the faculty of geography and ecology. During these events, many local and national farmers and producers participate and figure out solutions for their agriculture issues.

The university also provides expert assistance to companies involved in agriculture sectors for promoting sustainability at their work sites. These events provide them with knowledge and insights about environmental problems and their solution under the light of legislation.

Our researchers contribute with excellent research on environmental, agriculture, and prevailing practices by publishing in Scopus and non-Scopus peer-reviewed journals.



15.3.1 - Does your university as a body have a policy to ensure the conservation, restoration and sustainable use of terrestrial ecosystems associated with the university, in particular forests, mountains and drylands?

This Policy provides the exclusive mechanism for Samarkand State University - conservation, restoration and sustainable use of terrestrial ecosystems. A flourishing life on land is the foundation for our life on this planet. We are all part of the planet's ecosystem and we have caused severe damage to it through deforestation, loss of natural habitats and land degradation. Promoting a sustainable use of our ecosystems and preserving biodiversity is not a cause. It is the key to our own survival.

For this purpose, Samarkand State University acts proactively to penetrate the sustainable practices of flora and fauna. In order to implement, all campuses of the university act like a living library. For example, more than 10 types of drought-tolerant plants have been planted. The university publishes its sustainability report every year to showcase the actions and their outcomes. The Botanical Garden of Samarkand State University was given under the custody of faculty of biology. They treat this garden as a living laboratory to learn from nature and they manage it perfectly in a sustainable way.





- The First National Strategy and Action Plan for Biodiversity Conservation was approved by the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 139 of April 1, 1998.
- Biodiversity conservation is supported by the Global Environment Facility (hereinafter referred to as GEJ), the World Bank, the United Nations Development Program (hereinafter referred to as UNDP), the World Wildlife Fund and other international organizations. - strengthened. To be able to develop this aspect by SamSU.
- We need to focus on land degradation, and desertification processes and to avoid other negative consequences of unsustainable use of natural resources.
- Currently, the impact of negative factors on natural ecosystems and the reproduction of wildlife and plants continues. Continuing to effectively protect the components of biodiversity requires a systematic approach, and the development of comprehensive measures to protect both the animals themselves and their habitat and as well as flora.

15.3.2 - Does your university as a body have a policy to identify, monitor and protect any IUCN Red Listed species and national conservation list species with habitats in areas affected by the operation of your university?

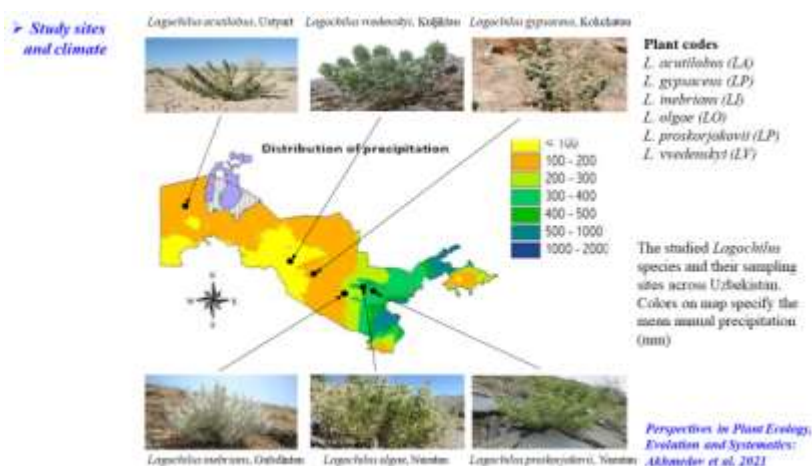
Samarkand State University's experts work on rare species declared by the International Union of Conservation of Nature. They collect information through rigorous fieldwork, analyze habitats, and conduct research on their adaptive characteristics to the change in the climate and local phenomena. Further, these researches are published in peer-reviewed journals for common people and interested readers.

For example, one research was conducted on “*Lagochilus inebrians* Bunge”.

Day by day, due to the irregular use of plant resources by humans, the diversity of green plants is disappearing. Due to climate change and global warming, vegetation cover is in crisis. Many unique types of plants are disappearing in the flora of Central Asia under the pressure of anthropogenic and climate change factors. In particular, a number of plants belonging to the mint family are among them. The mint family is one of the largest plant families on earth. Its representatives are widespread mainly in countries with a warm and temperate climate. This family includes about 200 genera and 3000 species. 360 species belonging to 53 genera are known to grow in Central Asia, and 238 species belonging to 39 genera are known to grow in Uzbekistan. The mint family is one of the widespread families in the flora of Uzbekistan, and it is distinguished from other families by its wealth of useful species. Representatives of such groups as mint, salvia, ziziphora, *L. inebrians*, origanums have been used in medicine, food, confectionery and perfume industry for a long time. *L. inebrians*, is a medicinal plant that belongs to the mint family and has been used in folk medicine since ancient times. 3 species growing in Samarkand region are included in the Red Book of Uzbekistan. One of the significant works conducted at Samarkand State University to study the bioecological properties of this unique plant and to determine new methods of its reproduction is "View species of *L. inebrians* in vitro conditions" breeding and establishment of a collection in the Botanic Garden of SamSU" is a research on the subject. Under the scientific guidance of Akbar Ahmedov, associate professor of the Department of Botany, the researcher conducts scientific research on the methods of reproduction and bioecological properties of the *L. inebrians*.



There are 46 types of the genus *Lagochilus* on Earth, 13 in Uzbekistan, - says researcher Gulbonu Torakulova. - Today, most populations of this species are in danger of extinction. Therefore, it is necessary to carry out monitoring work in order to preserve them in nature. Currently, it is important to breed *Lagochilus* species in vitro and establish a collection. The



analyses of the use and use of *L. inebrians* in the national economy showed that among the existing species of *L. inebrians*, in addition to honey and essential oil-producing species, medicinal and decorative, that is, ornamental species are also widespread in

our country. it became known. *L. inebrians* is one of the valuable medicinal plants, which are effective in calming the nervous system, treating skin diseases, controlling blood pressure, and stopping internal and external bleeding.



15.3.3 - Does your university as a body include local biodiversity into any planning and development process (e.g. construction of new buildings)?

Samarkand State University's campuses are a real manifestation of biodiversity. Vice-Rector of construction and renovations and its office is responsible for planning new buildings. Before constructing a new building or any infrastructure project, we do a complete biodiversity analysis and plan for restoring it.





In order to better understand the agriculture practices, rangeland degradation, biodiversity deterioration, ecosystem disturbance, and scarcity of water resources and their pollution. The faculties organize workshops, trainings, and conferences every year.

On 14 October 2022, an international conference was organized by the Food and Agriculture Organization and Samarkand State University on “Food Security: National & Global”. In this conference, many scientists have participated and discussed the core issues on food security.



During this conference, meritorious students got the certificate and prizes for their contributions.

15.3.5 - Does your university as a body collaborate with the local community, e.g. through partnerships, in efforts to maintain shared land ecosystems?

Samarkand State University believes in partnerships. Therefore, we have a policy to create partnerships with local farmers and food producers. The Institute of Agro-biotechnology proactively works with farmers under certain legal contracts to develop the technology and provide them with technological input for better farming and harvesting.

In this way, we also work with indigenous technologies to solve the issues in a sustainable way. Our experts work with farmers to handle agricultural issues and environmental problems.



Field experiments on soybean planting and cultivation between cotton rows were conducted at the scientific-experimental station in Akdarya district of Samarkand region. In the experiment, cotton and soybean row spacing was 90x20 cm double row, 8 variants and 4 repetitions. The "Zarafshon"

variety of cotton included in the State Register, Nafis and Selekt-302 soybean varieties were taken as experimental objects in the ongoing research.

The purpose of the study: to determine the effectiveness of optimal planting standards and inoculant application that will ensure higher yields of soybeans when intercropped with cotton and soybeans.

Sowing of cotton and soybean seeds was done on April 7, 2021. After sowing, the seed germinated in 9 days and soybean seeds germinated in 11 days. Field germination of soybean seeds with inoculant application was on average 88.2% and significantly increased compared to the control variant without inoculant application.

Crop care was carried out according to the procedure established in cotton agrotechnology.

In the experiment, when the Nafis variety of soybean was planted, cotton and soybean grew well together because it did not branch. When the variety Selekt-302 was planted with cotton, it was observed that the development of cotton was slowed down due to branching of the soybean.

In rows where cotton was planted separately, the number of cotton plants per hectare was 100,000, and when it was planted with soybeans, it was 72,000, and when soybeans were planted separately, the number of plants per hectare was 500,000, and when it was planted with cotton, it was 350-400,000.

Soybean seeds, when planted separately, form nodules on the roots, accumulate 70 kg/ha in pure soil, and up to 150 kg/ha in our rows with inoculants, because there is no need to use nitrogen fertilizers, and next year, up to 7-10 centners per hectare will be saved. allows to get a crop.

Soybean crop was harvested today, it was observed that the yield was 22 t/ha when soybean seeds were sown separately and 16 t/ha when planted together with cotton.

Cotton harvesting continues and yield determination is being carried out.

In conclusion, when soybeans are mixed with cotton and due to the use of inoculants, the increase in the number of symbiotic bacteria in the roots of soybeans increases soil fertility and has a positive effect on the next year's crop yield.

Recommendations

1. It is advisable to choose soybean varieties that do not branch and do not have a serious negative effect on the development of cotton when planted together with cotton.

2. Compared to the height of cotton, the height of the soybean plant is relatively low, and the study of early varieties by adding them to the experimental options will help to increase the relevance of the work and the efficiency of the results.

3. Conclusions based on the results of the first year's experiments will be summarized, a plan for next year's experiments will be drawn up, and the number of varieties in the experiment will be increased.



15.4.1 - Does your university as a body have water quality standards and guidelines for water discharges (to uphold water quality in order to protect ecosystems, wildlife, and human health and welfare, etc.)?

Samarkand State University discharges its waste to the waste disposal system as per the rules and regulations provided by the government of Uzbekistan. These laws and regulations are furnished by the government from time to time according to International standards.



We organize many events for understanding and developing a system for discharging waste water after taking necessary measures.

15.4.2 - Does your university as a body have a policy on reducing plastic waste on campus?

Samarkand State University's policy on reducing plastic waste describes our commitment to minimizing plastic at university and its owned buildings. It dictates the definition of plastic of waste, types of plastic waste, disposal mechanism, collection, and disposal in an appropriate way. As per policy, the university does not allow single-use plastic.



We promote at our campus that plastic is not allowed. For this purpose, we categorized plastic waste separately and collects in different dustbins.

15.4.3 - Does your university as a body have a policy, process or practice on waste disposal - covering hazardous materials?

Samarkand State University is determined to estimate the toxic waste for example laptops, computers, batteries, cells, and others. On the other hand, laboratories produce consistently toxic waste after each experiment. Therefore, the university acts wisely to reduce the utilization and reuse of waste products by fixing them or for other purposes.

Our policy describes the procedures and protocols for collecting, keeping, and disposing of hazardous waste.

(End)