APPROVED

Member of the Board - Vice-Rector for Scientific and Innovation Activities of NJSC "Al-Farabi Kazakh National University"

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POLICIES TO ENSURE SUSTAINABLE HARVESTING OF FOOD ON CAMPUS FROM AQUATIC ECOSYSTEMS

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Implementation of Sustainable Development Goal No. 14 “Life below water” at the university may include the following steps:

1. Curriculum Integration: A university may include courses in its curriculum that specialize in ocean issues and their impact on the environment. In these courses, students can study marine ecology, the impact of human activities on the oceans, and possible ways to protect and sustainably use them.

2. Scientific Research: The University may support scientific research aimed at understanding the oceans and their biodiversity. Research may include monitoring the health of marine ecosystems, as well as research into sustainable fisheries and aquaculture.

3. Conducting events and awareness campaigns: The University may conduct events and awareness campaigns aimed at raising awareness among students and staff about the importance of conserving oceans and marine resources. This may include lectures, workshops, exhibitions and other events that will help spread knowledge and stimulate action in support of the oceans.

4. Collaboration and Partnerships: The University may establish partnerships with local and international organizations that are involved in the conservation of oceans and marine ecosystems. Cooperation may include exchange of experience, joint research projects and interaction in the field of sustainable development of the marine environment.

5. Example of sustainable use: The university can itself become an example of sustainable use of marine resources by, for example, implementing waste management systems, supporting sustainable fishing activities or developing aquaponics and other sustainable agriculture systems associated with marine resources.

The implementation of SDG-14 at the university not only promotes the conservation and sustainable use of oceans and marine resources, but also provides students with knowledge and practical skills for sustainable future work in water resource management.

To ensure sustainable collection of food products on the university premises coming from aquatic ecosystems, Al-Farabi Kazakh National University is guided by the following approaches:

1. Promote sustainable fisheries: Support and promote fishing methods that minimize negative impacts on marine and freshwater ecosystems. This may include setting fishing quotas, restrictions on certain types of catch or collection, and the use of selective fishing methods.

2. Promote Aquaculture: Aquaculture, which is the farming of fish, shellfish and other aquatic life on purpose-built farms, can be a sustainable source of food. The development of such farms on campus can be encouraged by supporting environmentally responsible aquaculture practices.

3. Local Sourcing: Priority is given to food products grown or caught close to campus. This reduces the environmental footprint associated with long food transport and supports local agriculture.

4. Collaborate with Local Organizations: Working with local nonprofit organizations that focus on aquatic ecosystem conservation and ecological restoration can help develop and implement policies that promote sustainable food harvesting.

5. Education and Outreach: Incorporating educational programs and awareness campaigns aimed at students and campus staff will help raise awareness of the importance of sustainably harvesting food from aquatic ecosystems and how to maintain them.

Adopting these policies and approaches can help the campus sustainably harvest food from aquatic ecosystems, promoting the conservation of natural resources and biodiversity.

The following approaches can be used to provide food on campus from aquatic ecosystems:

1. Sustainable Fisheries: Collaboration with local fishermen and organizations that are involved in sustainable fisheries can ensure a supply of fresh and sustainable fish and seafood on campus. Such organizations usually catch fish in compliance with environmental standards and minimal impact on the marine ecosystem.

2. Aquaponics: Installing an aquaponics system on a university campus allows you to grow fish and plants in an integrated system where fish waste serves as nutrient for the plants. This allows you to obtain fresh, organic food while minimizing your environmental impact.

3. Aquaculture: The development of aquaculture, that is, the cultivation of fish, shellfish and other aquatic organisms on special farms, can provide a stable supply of food to the university territory. It is important to choose sustainable aquaculture methods to reduce the negative impact on the environment.

4. Local sources: Priority is given to food products grown or caught near the university, so-called local sources. This helps reduce the environmental impact of transportation and also helps support local farming and economies.

5. Collaborate: Collaborating with local fish and seafood supply organizations can be an important step in securing food supplies from aquatic ecosystems. Such partnerships can ensure a stable supply of products and facilitate joint efforts in the sustainable use of marine resources.

It is important to consider sustainability and responsibility when choosing foods that come from aquatic ecosystems. This includes maintaining environmental standards, monitoring and controlling product quality, and supporting and developing sustainable water sector practices and technologies.

An environmentally sustainable and comfortable “green” environment is being created on the campus of Al-Farabi Kazakh National University. The riverbed of the Kerenkulak River has been improved with a system of treatment facilities. Water from the river is used in the artificial ecosystem "Aquaponics", which is a unique recreation place for students, guests of the university campus and residents of Almaty, as well as a practical basis for training students in the maintenance and breeding of ornamental and valuable species of fish and plants.

It is worth noting that aquaponics is a system of harmonious combination of hydroponics (growing plants without soil in a special nutrient solution) and aquaculture (growing aquatic organisms such as fish or crayfish). Aquaponics can be a great option for a university as it not only provides fresh organic food, but also promotes teaching and research in sustainable agriculture and aquaculture. Here are a few benefits of aquaponics at university:

1. Educational Opportunities: Aquaponics provides a unique opportunity for students to study and understand the processes of plant growth and the development of aquatic organisms. This can be incorporated into academic programs and courses, as well as provide students with practical skills in sustainable agriculture and aquaculture.

2. Research Opportunities: The university's aquaponic system can serve as a center for research into improving the efficiency of aquaponics systems, developing new methods and technologies for aquatic systems, and improving the sustainability of food production.

3. Sustainability and Ecological Footprint: Aquaponics is resource efficient - water is circulated through the system and reused, and no land is required to grow the plants. This reduces water consumption and land use, as well as reducing the negative impact on the environment.

4. Local food supply: Installing an aquaponic system on campus allows fresh food to be produced on site, helping to support local suppliers, reduce transport costs and improve the availability of fresh and organic food for students and staff.

5. Promote sustainability: Aquaponics can serve as an example and inspiration for others in society in the field of sustainable agriculture and environmentally responsible consumption.

Introducing aquaponics into a university context can be a beneficial step that promotes innovation and knowledge in sustainable food production, as well as increasing educational and research opportunities for members of the university community.

Ensuring the sustainable collection of food on campus from aquatic ecosystems requires adherence to the following principles:

1. Compliance with environmental standards: All activities related to the collection of food from aquatic ecosystems must comply with strict environmental requirements and standards. This includes minimizing negative impacts on ecosystems and adhering to rules for the sustainable use of natural resources.

2. Species Diversity and Conservation: Species diversity conservation must be considered when collecting food from aquatic ecosystems. This may include limiting the catch of certain species, enforcing minimum fish sizes, or other restrictions to prevent population declines and maintain healthy ecosystems.

3. Control and Monitoring: Establishing control and monitoring mechanisms is essential for sustainable food collection. This may include regular surveys of the state of aquatic ecosystems, monitoring the level of catch and its impact on populations of fish and other species.

4. Transparency and stakeholder participation: It is important to ensure transparency in the process of collecting food from aquatic ecosystems and actively involve stakeholders such as students, staff and local communities. This may include consultation, regular communication and explanation of sustainable food harvesting policies.

5. Encouragement and Education: The University can encourage and support activities and initiatives aimed at the sustainable collection of food from aquatic ecosystems. This may include providing grants, participating in ecosystem restoration projects, organizing educational events and awareness campaigns.

Adherence to these principles will help the university ensure sustainable collection of food from aquatic ecosystems, reduce negative environmental impacts, and promote the conservation of natural resources for future generations.