

Role of Green innovations in agriculture

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The main activities of the Agrarian Innovation Center



**PROMOTING AND
ENCOURAGING
INNOVATION**



**COMPETITIONS,
CONTESTS AND
HACKATHONS**

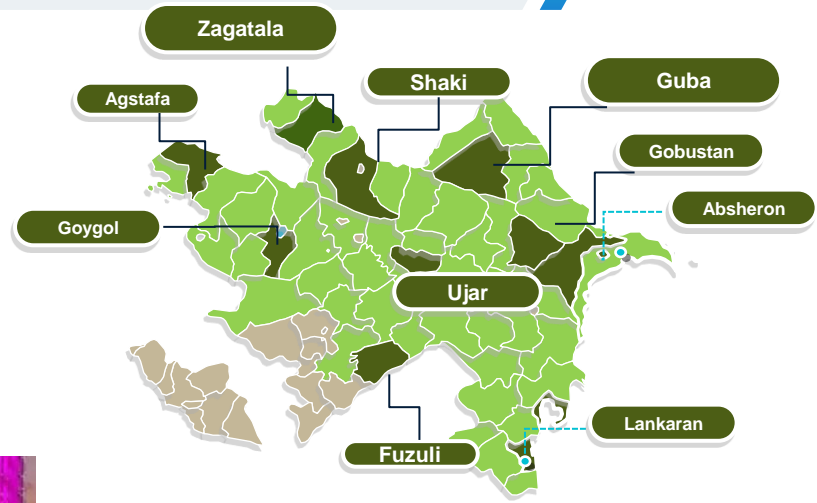


**INNOVATIVE
TECHNOLOGIES
TRANSFER**

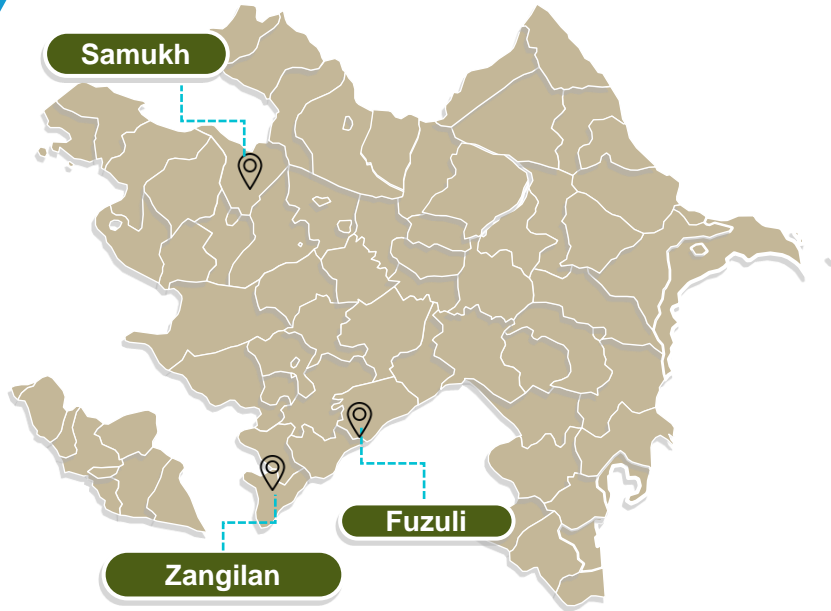


**INNOVATIVE PILOT
PROJECTS**

Agrarian Innovation Festivals



Agrovoltaics



Agrovoltaics provides an efficient and innovative solution to competition for land use through synergies between renewable energy and agriculture, contributing to sustainable rural development and the protection of biodiversity and the ecosystem.

Use of smart greenhouses of the fourth and fifth generations

- ❑ Opportunity of harvesting several times a year
- ❑ Plant protection throughout the entire growth cycle
- ❑ Equipped with heating systems
- ❑ Ability to withstand impact of the weather
- ❑ Suitable for various climates



Use of drones in agriculture

- ❑ AI allows drone vendors to use information from sensors attached to the robot to collect and process visual and natural information.
- ❑ Drones can perform 3D mapping with high accuracy
- ❑ Determine the level of assimilation by plants of fertilizers applied to the field
- ❑ Determine the irrigated or arid parts of the field
- ❑ Determine the level of infection of a cultivated plant
- ❑ Detection of ecologically stressed areas of the field



Smart Village

Developed on the territory liberated from the Armenian occupation - *Zangilan region*. Within the project about 200 houses have been built in the area. The project covers 5 development components:

- Housing
- Production
- Social services
- Smart agriculture
- Alternative energy



Electronic Agriculture Information System (EAIS)



From 2020, crop and livestock subsidies in Azerbaijan are organized via EAIS.



Subsystems EAIS:

- Subsystem of registration of agricultural entities
- Subsystem of subsidies
- Livestock and artificial insemination subsystem
- Vendor Subsystem
- Workflow management subsystem
- Information subsystem
- Analysis and reporting subsystem

“Green energy” zone in Karabakh region

Statistics :

- Wind power in Azerbaijan stands at 59.2 % of overall renewable sources
- Solar power as the second-largest green energy source- 8,000 MW potential
- Biomass, geothermal, and hydropower- 900 MW, 800 MW, and 650 MW, respectively
- The solar radiation per square meter in liberated regions is reportedly 1600-1700 kW/hour per year, while the total solar energy potential is estimated at 7,200 megawatts.

Main goals :

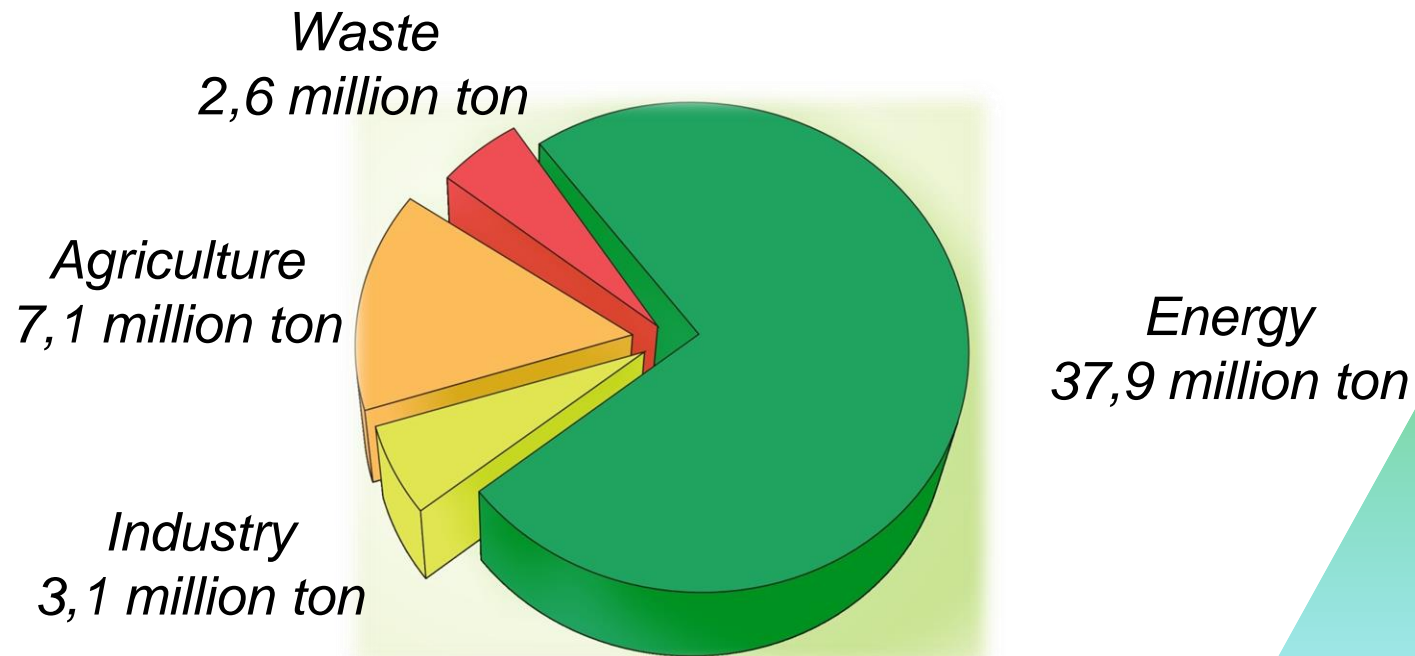
- To transform the region fully into a green energy zone by 2050
- To reduce carbon dioxide emissions by 40 percent
- to make up 30 percent of Azerbaijan’s electricity generation by renewables by 2030

Aquaponics

- Aquaponics encompasses two agricultural products (fish and vegetables) being produced from one nitrogen source (fish food);
- Aquaponics doesn't require soil and therefore it's not susceptible to soil-borne diseases;
- Aquaponics is an extremely water-efficient system;
- Aquaponics doesn't require using fertilizers or chemical pesticides.



Greenhouse gas emissions in Azerbaijan



* According to the Ministry of Ecology and Natural Resources for 2020.

Land use by area



Animal husbandry and poultry

- Pasture use control

- Control of methane gas emitted from manure



Crop husbandry

- Periodic rest of the lands

- Land cultivation in accordance with natural conditions

- Control of the fertilizer application process



Planned adaptation measures:

- Efficient use of pastures, prevention of degradation;
- Monitoring of water level changes, study of the destructive impact of water;
- Optimization of sowing, agricultural crop production and agrotechnical application, as well as accounting for animal breeds, nutrition and storage conditions, taking into account changing climatic conditions;
- Strengthening the protection of plants from climate-dependent pests, especially at the borders of modern areas, the creation of drought-resistant plant varieties;
- Breeding drought-resilient varieties in animal husbandry
- Development of an early warning system for natural disasters in the field of agriculture, etc.



Planned adaptation measures:

- Collection of methane gas generated from livestock and poultry manure using modern technologies;
- Involvement of manure residues in the production of organic fertilizers after biogas separation;
- The use of the resulting biogas for heating livestock complexes and greenhouses.



THANK YOU!