



Tomaszyn

Country: Poland

Inhabitants: 18

Type of area: Sparsely populated, lakes and forest

Governance: No local governance body

Administrative level: lower than LAU2



About Tomaszyn and Ostoja Natury Cooperative

Tomaszyn is a small village located in Warmia and Mazury. **It consists of ten households.** The region is classified as the Green Lungs of Poland and has the lowest population density in the country. There are eight landscape parks in the voivodship, which shelter natural phenomena on a European scale. It is said to be the Land of a Thousand Lakes. Tomaszyn has been a farming and prosperous village for many centuries, first written information dating to 1410. However, most of the village buildings were destroyed during World War II. The population shrunk to four farms and several vacationers reaching the lowest point in 2017.



A year later, in 2018 the **Cooperative Ostoja Natury was formed and settled in Tomaszyn.** The cooperative was created by 8 non-local members with the intent of establishing reference regenerative farm model of a smart village and centre for further regenerative agriculture and social development in the area. Making it a reality required the local engagement by Ostoja Natury Cooperative and cooperation with local farmers from Tomaszyn (some of them working on the farms of Ostoja or selling products to the cooperative - but they are not formal members of the cooperative due to lack of resources and capacity). **The goal of the cooperative is to create an ecosystem designed to provide economic efficiency with minimal influence on the environment,** using methods tested over the ages e.g crop rotation, raised seedbeds, refreshed home recipes and implementing technological innovations of modern times.



Smartness of Tomaszyn and Ostoja Natury

Ostoja Natury **brings innovation to the village** through creating the ‘agricultural ecosystem of tomorrow’ (through technological innovation) and gradually transforming the social fabric of the village through social innovation. :

- **Technical innovation:** Ostoja Natury is experimenting with a range of innovations and techniques in food production, including waste-free production and self-sufficient habitat for households with limited external purchases and meeting the needs of household members with own production, passive greenhouse and rain-based irrigation system, locally produced self-draining clay irrigation vessel (Ost-Oya), etc.
- **Social innovation:** Ostoja Natury cooperates intensively with neighbouring farmers households, creating employment locally and increasingly acting as a local hub. Ostoja Natury operates as a cooperative, not only integrating local land owners and farmers, but also people contributing and committed to regenerative agriculture in urban areas (strengthening urban-rural linkages). Ostoja directly produces high-quality food from farm-to-fork selling through its local Biohub Bazar/ farmers' market in nearby Olsztynek, Bazar Natury in Gdansk and food-boxes system in Warsaw.
- **Digital innovation:** To keep up with the pace of 21st century developments in ecological production, Ostoja Natury **experiments with new robotics system** that is designed to assist farmers with a variety of tasks, including planting, weeding, and spraying. It uses advanced sensors, machine learning, and artificial intelligence to navigate fields and perform tasks with precision and efficiency.



The Smart Journey of Ostoja Natyry and Tomaszyn



Establishing Ostoja Natyry Cooperative

The village of Tomaszyn was disappearing before the agricultural Cooperative Ostoja Natyry was established. The appearance of the cooperative in 2018 breathed new life into the village. Ostoja Natyry was created with the goal of establishing a reference Regenerative Farm and Center for regenerative agriculture development in the area.

2018

In June, 2019 the cooperative members finalised the acquisition of 50 hectares of farming land and a building. Farming production was launched, and the first crops were collected the following year. All production was registered for 'ecological certification'. Farmers from Tomaszyn and surrounding areas cooperate with Ostoja Natyry (including selling their products at the BioHubBazar and participation at BioTech event).

Title of initiative: Establishment of Ostoja Natyry
OVERALL BUDGET: € 15.000 (registration)
Private fund: €15.000
Duration 2018

Title of initiative: Acquiring land & starting regenerative production with Ecological Certification
OVERALL BUDGET: €600.000
Private fund: €600.000
Date: 2019



Innovative & sustainable ecosystem



Title of initiative: The Passive Greenhouse with a low-tech geothermal solution
OVERALL BUDGET: € 25.000
Private fund: € 25.000
Duration 2019

Passive Organic Cold Storage from hempcrete with solar roof was built as a sustainable, eco-friendly infrastructure. Hempcrete is a bio-composite non-toxic building material that contains a mixtures of hemp, hurds and lime. Hempcrete stores heat in the thermal mass of its wall, which is then released slowly as the building cools down. Hemp is the only building material that can remove carbon from the air. The goal to achieve a zero net energy consumption, meaning the total amount of energy used by the building on an annual basis is equal to the amount of renewable energy created on the site (solar roof).

Title of initiative: Passive Organic Cold Storage
OVERALL BUDGET: € 250.000
Private fund: €250.000
Duration: 2020-2021

2019

Societal engagement



Ostoja Natyry TV was established as a channel for communication with Ostoja's cooperative members, consumers & the wider interested public. All content is produced in-house and focused on the life on the farm and the cooperation between Ostoja Natyry and technological partners. Ostoja Natyry shares its experience, knowledge, and know-how used its site. More than 50 episodes have been aired and grouped under several series.



Title of initiative: Ostoja Natyry TV
OVERALL BUDGET: € 25.000 (starting up, first two years)
Private fund: € 25.000
Duration 2019-ongoing

Since 2020 Ostoja Natyry is organising its yearly **Bio tech Conference**, an annual meeting of high-quality food industry professionals and open source knowledge-sharing platform. The Bio-Tech event aims to raise awareness about natural farming methods and presenting and popularising modern technological solutions and the implementation of scientific achievements into agricultural practice.

Title of initiative: Biotech Conference
OVERALL BUDGET: € 120.000 (3-year budget)
EU Fund (EAFRD): € 70.000
Private fund: € 50.000
Duration: 2020-2022 (ongoing)

The Smart Journey of Ostoja Natury and Tomaszyn



Eco-friendly production methods



Ostoja Natury **built greenhouses** in order to cultivate plants under controlled conditions with high productivity, minimise the ecological footprint, be cost-effective and cope with the continuously increasing costs of energy. The greenhouses were developed in cooperation with the specialist Polish experts in the field of heat-exchange and geothermal solutions.

Ostoja is using a **no dig system**, to leave soil undisturbed as much as possible, therefore, allowing all soil life, including microbes and earthworms, to proliferate.



2020

A **passive, precise rainwater irrigation system**, with a pilot area of 2 hectares under irrigation was set up allowing the capture of full rainwater potential and recover 99% of dirty water, with very low maintenance cost and up to 70% water conservation compared to standard irrigation systems.

Ost-Oya (olla, oya) - an own product also produced for sale by Ostoja - is used as a natural irrigation system in vegetable production. It is neo-antique vessel made of porous, self-permeable clay that is buried in the ground to naturally irrigate the garden while reducing water loss and watering work.

BioHubBazar & BioHub distribution center was created to offer products directly to consumers (farm-to-fork), respond to the growing demand for organic and traditional products. A permanent place was built in nearby Olsztynek to sell high-quality products. More than 50 local entities are part of the producer's group.

Title of initiative: BioHubBazar & BioHub distribution center
OVERALL BUDGET: €50 000
EU Fund (EAFRD): € 15 000
Other public funds: € 15 000
Private fund: € 20 000
Duration 2019-ongoing

Farm to fork



With **"Package from Nature"** farm-to-fork strategy Ostoja Natury packages and delivers its freshly produced products directly to consumers on a regular basis, weekly, through a subscription service. With the subscription consumers receive fresh, seasonal produce and the service provides a stable source of income for the farm.

Title of initiative: A package from nature
OVERALL BUDGET: €25 000
Private fund: € 25 000
Duration 2022-2023

Within the Smart Rural 21 project, Tomaszyn has received support to further experiment for the diversification of farming, including planning a new fruit orchard with agro-forest specialist, workshop on regenerative grazing for members of the cooperative and local farmers, and passive greenhouse planning with architect-engineer, wood and building specialist.

2022



Title of initiative: Capacity building
OVERALL BUDGET: €21.700
EU Fund (SR21): €21.700
Date: 2022

Members of Ostoja Natury started to plan the construction of an **eco-village**, including the first building(s) to be built on a land already acquired by Ostoja. The Smart Rural 21 project supported this through bringing the Earthship Project specialist from the Netherlands who provided tailor-made support through framework of ideas and inspiration. Ostoja Natury members have long-term plans for revitalising and reinforcing the local economy, community and attracting newcomers, through creating sustainable living conditions in the village.

Experimenting with robotics

Field robot - specialising in agricultural technology to assist farmers with a variety of tasks, including planting, weeding, and spraying with advanced sensor and artificial intelligence - is being tested in Ostoja.





In Focus:



Goal: Ostoja Naturity in Tomaszyn strives to achieve the highest degree of **circular economy**, especially in the areas of regenerative agriculture, production including mechanisation and digitalisation, economy maximising the profitability of organic production, housing through waste-free, self-sufficient habitat and power industry (biogas plants and other systems with the highest energy efficiency and lowest possible environmental burden). **Regenerative agriculture** aims at topsoil regeneration, increasing biodiversity, improving the water cycle, enhancing ecosystem services, supporting bio-preservation, increasing resilience to climate change, and strengthening the health and vitality of farm soil. To further reverse the trend of Tomaszyn community degradation they are planning to establish **earthship village**, that can provide an opportunity to create sustainable, affordable, and resilient community that prioritize environmental stewardship and community building.

Experience to share:

Tomaszyn's smart village strategy includes among others several measuers to create sustainable living conditions in the village, both in terms of infrastructure and the Construction of passive residential houses in Tomaszyn (basis of the earthship village concept). Ostoja Naturity's efforts to bring smart actions into the community build on five existing sub-strategies:

- **Healthy food farm:** producing organic food
- **Innovation farm:** introducing innovative solutions to farming
- **Green energy farm & energy independence:** enabling the use of efficiency energy, biomass and renewable energies
- **Educational farm:** finding ways to raise awareness about regenerative agriculture
- **Culture farm:** education & communication system



Ostoja Naturity is ready to share innovations achieved in all these areas, including greenhouse, passive rainwater irrigation, ost-oja, hempcrete storage space, robotics, waste management and many more regenerative agricultural techniques.

Next steps:

Beside experimenting with new technologies (e.g. robotics) in several areas linked to regenerative agriculture, Ostoja Naturity members aspire to further revive the small village of Tomaszyn, through creating new economic opportunities in regenerative agriculture, and the possible construction of a sustainable eco-village (self-sufficient habitat / rural households), with an economy based on regenerative agricultural food production. There are also plans to become a model educational farm system.





Local governance (public sector):

Tomaszyn is a village in the municipality of Olsztynek where the public and local administration is based. There are no elected leaders at the village level. There is cooperation and direct contacts between the municipality and the president of the Cooperative Ostoja Natury (such as the BioHubBazar located in Olsztynek), and there are discussions on further collaborations.

Local community (civil society):

There is only one cooperative (Ostoja Natury) registered in Tomaszyn. Local inhabitants work for or corporate with Ostoja Natury Cooperative (although only two members of the cooperative are living in Tomaszyn). Direct personal contacts are used with inhabitants of the village. However, there is no built infrastructure yet (e.g. common community spaces) that could reinforce these dynamics more strongly. There are plans to strengthen these aspects further, however, this is a slow process.

Businesses (private sector):

Cooperative Ostoja Natury as the only business entity in Tomaszyn is responsible for all investments, development, planning, promotion, and communication. Cooperative is also the only job and contract provider in Tomaszyn.

Research (scientific sector):

Cooperative Ostoja Natury with technological partners is developing and testing a number of technologies, processes, and technical and organisational solutions. Ostoja Natury is also open to cooperation with universities and scientists but so far Regenerative Agriculture and small farms are not in the main field of interest of academia in Poland. Ostoja Natury had cooperation with the Polish Academy of Sciences Institute of Rural Development and Agriculture (IRWIN PAN) and the Polish Ministry of Agriculture regarding the Smart Villages concept.



Community engagement process

Before establishing Cooperative Ostoja Natury in Tomaszyn, the community of the village was dissolving. Tomaszyn faced a downgrade in farming and the escape of people to larger cities. This process had its climax in 2018 – there were 9 households with 40 registered inhabitants and only one working family farm were left in the village (beside the Ostoja Natury family that later moved into the village).

In 2019 Cooperative Ostoja Natury was established in Tomaszyn with eight founding members (out of which two have been living in Tomaszyn) and since then the existence of the cooperative managed to preserve local jobs and stop the downfall of Tomaszyn by bringing new economical growth perspectives. Since then Ostoja Natury has been leading the Smart Villages process in Tomaszyn. Farmers from the local area are cooperating with Ostoja Natury, but more importantly, Ostoja gives farmers who produce high-quality food throughout the region better access to consumers, both locally (BioBazar in Olsztynek) and to a much wider audience through the distribution channels it builds to urban areas. At the moment, 4 farmers are working on a permanent basis in Ostoja and one farmer sells his products in cooperation with the cooperative.

Ostoja Natury is in the process of further community building. They have future plans for constructing self-sustained housing for newcomers (especially for members of the cooperative who share the vision of local development based on regenerative agricultural activities). However, this is a slow process that starts with strengthening economically the Cooperative through technological and social innovation.

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Further information:

Smart Rural 21 village page of Tomaszyn:
Smart Village Strategy of Tomaszyn: https://www.smartrural21.eu/wp-content/uploads/Tomaszyn-Smart-village-strategy_.pdf
Website of Ostoja Natury: <https://ostojanatury.pl/>
Smart Rural 27 page: <https://www.smartrural27.eu/village/tomaszyn/>