Harvesting Sun and Soil: Unlocking Moldova’s Dual Potential

An Agrivoltaics Guide for Moldova

Imprint

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Facilitated within the framework of the German Energy Partnerships and implemented by the Federal Ministry for Economic Affairs and Energy (BMWE), this guide provides a foundation for introducing Moldovan farmers and agricultural stakeholders to the concept of agrivoltaics.

The publication was developed in cooperation with the Ministry of Energy of the Republic of Moldova.

Contents

1 Agriculture and energy in Moldova

1.1 The role of agriculture

Roughly 75% of the land in Moldova is used for agricultural purposes, which is due to the favourable soil and weather conditions.[1] As a result, the agricultural sector plays a very important role in the national economy. Fruits account for 40% of agricultural production.[2] Key crops include apples, plums, and nuts, with grapes and walnuts assuming a particularly important role in Moldova's agriculture.

The changing climate is expected to have a profound impact on the Moldovan agricultural sector. It is therefore crucial for sector stakeholders to adapt their practices. Agrivoltaics can offer a viable solution that allows farmers, agricultural enterprises, and associations to protect plants from extreme weather, such as high sun irradiation or heavy rainfall, while simultaneously enabling the generation of affordable renewable electricity.[3]

1.2 Current state of renewable energy development

According to official data, in 2024, the Republic of Moldova generated 691 GWh of electricity from renewable sources, which represents 16.72% of the country's annual electricity consumption.[4] The share of renewables is expected to increase further as the country advances towards its 2030 target, building on the rapid expansion achieved recently.[5]

As set out in Moldova's National Energy and Climate Plan (NECP), the share of renewables in gross final energy consumption is to increase to 30% by 2030. In line with other measures described in the NECP, this will contribute to Moldova's efforts to reach net-zero emissions for all greenhouse gases by 2050.[6]

Since the start of the EU accession process in June 2024, Moldova has intensified its efforts to align its national energy policies with EU legislation. Institutional reforms, market adjustments, and infrastructure development are all directed towards integrating Moldova into the European energy system and thus to making the Moldovan energy system more resilient and sustainable.[7] In this context, renewable energies offer an ideal solution. Unlike natural gas, electricity generated from renewable sources does not depend on finite resource deposits or specific geographic locations. The decentralised nature of renewable energies further facilitates local adoption, as electricity can be generated on site without requiring a direct grid connection. Together, these factors make renewable energies, such as agrivoltaics, a key pillar for Moldova's energy transition.

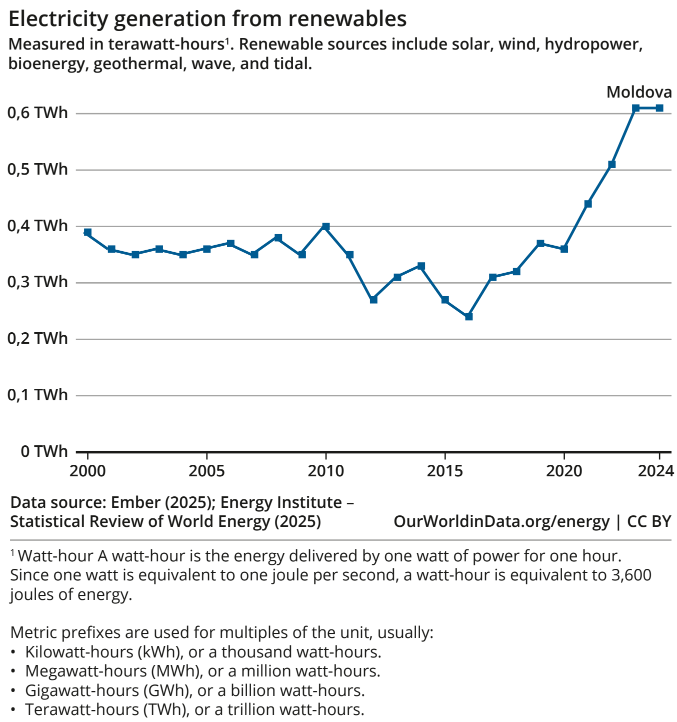

Figure 1: Electricity generation from renewables (Ember, 2025)

1 Invest Moldova, 2024
2 Invest Moldova, 2024
3 Cotton et al., 2025
4 Ministry of Energy of the Republic of Moldova, 2025
5 IEA, 2020; UNDP, 2025
6 UNDP, 2025; Government of the Republic of Moldova, n.d.
7 IEA, 2020

2 Planning an agrivoltaic system

When planning an agrivoltaic system, it is important to consider various concepts and panel technologies as well as the system's specific parameters.

What is an agrivoltaic system?

Agrivoltaic systems describe the combined use of land for agriculture and electricity generation through photovoltaic panels (PV panels).

2.1 Agrivoltaic systems

There are various ways of installing agrivoltaic systems. Installations can differ in terms of their height flexibility, and row spacing, as shown in Figure 2.

Agrivoltaic systems that are mounted close to the ground are usually vertical systems (A). These systems are also known as interspace systems because they are located between fields. They are easier to install than elevated systems (B, C, D), which are usually known as overhead systems.

Overhead systems can be subdivided into static systems (B), single-axis tracking-systems (C) and dual-axis tracking systems (D). Tracking systems can help maximise yields. However, they need more maintenance.

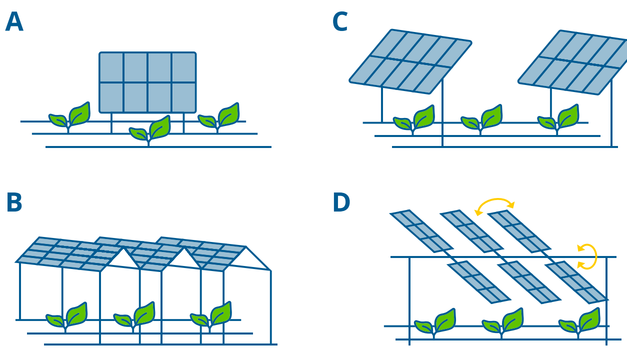

Figure 2: Different panel technologies for agrivoltaics (Barthel et al., 2023)

Solid wafer-based silicon panels are the most widely used photovoltaic (PV) panel technology worldwide. These can take the form of bifacial panels or semi-transparent panels, among other types. Bifacial panels are used in particular in interspace systems. However, they can also increase energy yields by up to 25% in overhead systems.[8] Semi-transparent modules allow higher and more even radiation to reach the plants through the spaces between small panels in Plexiglas sheets.

Figure 3: Sample use of semi-transparent PV panels by MKG Göbel

Figure 4: Sample use of vertical bifacial PV panels by Next2Sun

2.2 Parameters in agrivoltaic systems

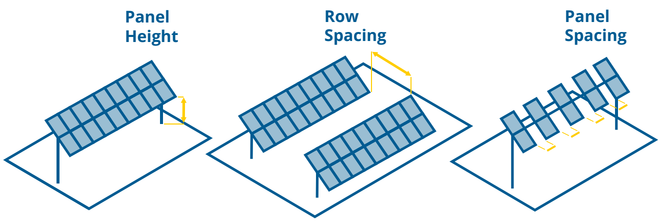

Figure 5: Sample illustration of agrivoltaic features (based on U.S. Department of Energy, 2024)

Various parameters in agrivoltaic systems can be adapted to suit the local conditions and plant needs and to maximise electricity yields. The three most important features to

8 Trommsdorff et al., 2024, p. 46

consider are: (i) panel height, (ii) row spacing, and (iii) panel orientation and tilt. Both plants and agrivoltaics generate their respective outputs (crops and electricity) from solar irradiation. Consequently, it is important to find the right balance between agricultural yields and electricity yields by adapting the PV system's parameters, as all the parameters affect shading and light diffusion.

2.2.1 Panel height

As shown in Section 2.1, panel height can differ in agrivoltaic systems: Interspace systems, otherwise known as vertical systems, are usually mounted close to the ground. As air and humidity circulate differently in these vertical systems, their impact is less compared to overhead systems. The following table shows the advantages and disadvantages of different designs for agrivoltaic systems.

Table 1: Comparison of vertical systems and low or high overhead systems

	Advantages	Disadvantages
Vertical interspace systems	Lower costs for the mounting system No constraints on the height of machines or plants	Less or no protection from severe weather events
Low overhead panel installation (2–4 metres high)	High water transpiration avoided Lower costs for the mounting system compared to high overhead panel installations	Less flexibility in crop selection Risk of plant diseases or pests due to higher humidity Heat trapping Concentrated shading
High overhead panel installation (>4 metres high[9])	Improved air flow and lower surface temperatures Good accessibility for agricultural machinery Flexibility in crop selection (with regard to crop height; sample high crops: sunflowers, wheat, maize) Less concentrated shade results in better photosynthetically active radiation, leading to more effective land use	Higher water transpiration Higher costs for the mounting system Higher wind loads

9 Mehta & Zörner, 2025

To conclude, overhead systems can produce both higher energy and agricultural yields, as they ensure more even light distribution and create a favourable climate under the panels.[10]

2.2.2 Row spacing and panel spacing

Both larger spaces between the panels in the mounting system and larger spaces between the rows of panels enable more light to reach the plants.[11] However, with regard to electricity yield, this also means that a larger area of land is required to generate the same amount of electricity compared to a more compact panel configuration. The panel spacing may also depend on the chosen panel technology. Semi-transparent panels are more light-permeable, and hence spacing between them is usually unnecessary.

2.2.3 Tilt options and panel orientation

When using overhead panels without single- or dual-axis tracking, their orientation and tilt angle must be chosen when the system is installed. The optimum tilt angle depends on the location's exact latitude.[12] On average, the optimum tilt angle is approximately 30°.[13] An east-west orientation of the panels provides more consistent lighting for crops and generates electricity throughout the day.[14] A north-south panel orientation produces a higher energy output.[15]

Flexible systems can move along one or two axes, thus enabling them to change their tilt angle (as shown in Section 2.1). This can help to optimise plant growth by allowing more sunlight to reach the plants during crucial phases, such as germination.[16]

2.3 Complementary technical elements

2.3.1 The supporting construction

To construct the substructure, an anchoring or foundation in the ground must be assured. Prior to construction, the soil layers and structure should be assessed in order to adapt the anchoring requirements. The higher the structure, the greater the demands on the foundation. In an ideal scenario, it should be possible to remove the construction completely to protect the agricultural land. In many cases, the substructure is anchored in the ground by pile driving.[17] [18] [19]

2.3.2 Water use efficiency

Even though water use efficiency is not a direct design parameter, it is influenced by the shading conditions and hence should be considered from an early stage. In dry regions with less precipitation, overhead agrivoltaic systems can reduce evaporation and contribute to lower soil temperatures, thereby reducing the need for irrigation.[20] In static systems, drip edges can form, leading to erosion. Narrow PV modules can help ensure more even rainwater distribution. Tracking systems avoid drip edges through the movement of the panels. Gutters to channel the collected water away from the panels may help to prevent erosion. In this case, however if an irrigation system is not already installed, it is very likely to be required in order to ensure an adequate water supply.[21]

10 Mehta & Zörner, 2025, p. 22
11 Mehta & Zörner, 2025, p. 10
12 Toledo & Scognamiglio, 2021, p. 2
13 Toledo & Scognamiglio, 2021
14 Trommsdorff et al., 2021
15 Mehta & Zörner, 2025
16 Kallioğlu et al., 2024, p. 12
17 Trommsdorff et al., 2024, p. 48
18 Schletter, n.d.
19 Goldbeck Solar GmbH, n.d.
20 Trommsdorff et al., 2024, p. 33
21 Trommsdorff et al., 2024, p. 50

2.3.3 Additional technical components

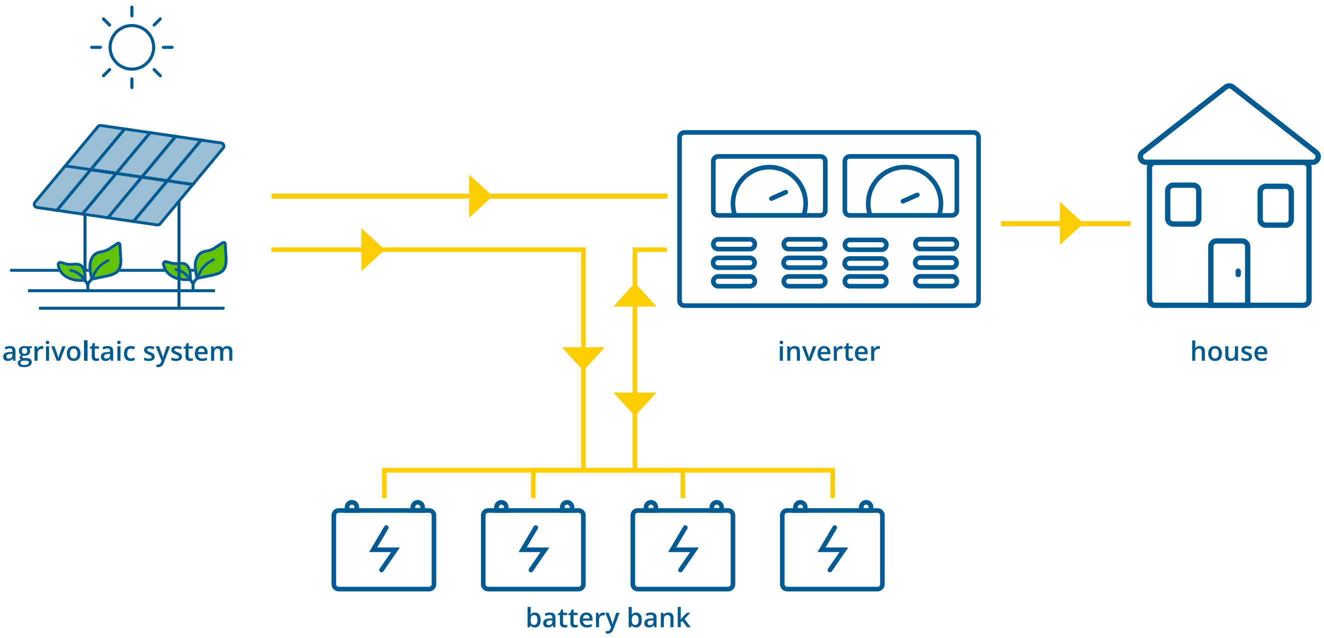

Figure 6: Components of an agrivoltaic system (based on Opfer et al., 2022)

Besides the PV modules and their mounting systems, additional technical components are needed to complete an agrivoltaic system. They include an inverter and, possibly, a storage unit. An inverter is essential for converting direct current from the PV installation into alternating current. This is necessary to feed electricity into the grid and to power home appliances. A storage unit, which could consist of batteries, can be very useful, especially when the PV system is not connected to the grid. It allows surplus electricity to be stored and used later, ensuring no energy is lost.

2.3.4 Maintenance and cleaning

Compared to other configurations, higher modules are more difficult to clean and maintain. The more complex the system (e.g. single- or dual-axis trackers), the more likely it is to require more intensive maintenance.[22] Scheduling annual inspections and thorough maintenance every four years is recommended.[23] Cleaning require-ments depend on precipitation in the location. If rainfall is regular, cleaning work is minimal.[24] Maintenance costs for standard ground-mounted PV systems vary between MDL 4,000 and MDL 20,000 depending on the size of the area and the system.[25] As agrivoltaic systems are more complex, higher costs should be assumed.

22 Trommsdorff et al., 2024, p. 47
23 Costa & Hamdan, n.d.
24 Trommsdorff et al., 2024, p. 46
25 “Servicii de întreținere pentru stațiile solare”, n.d.

3 Plant growth in agrivoltaic systems

Plant growth is influenced by various factors, such as the type of crop, seasonal changes and the local climate.[26] Plants' sensitivity to irradiation varies, as is shown in Figure 7. The plants on the left in the blue area are considered to produce better yields with shading. The crops in the middle in the yellow area are indifferent to changes in irradiation in either direction. The plants in the red area require more sunlight and thrive less well when placed in the shade. Possible changes in yields are being researched in various projects in different regions across the world. A general estimate of yield changes cannot be provided, as the influencing factors vary from year to year, from region to region, and from installation to installation.

Given the agricultural products grown in Moldova, there is considerable potential to apply agrivoltaics without significant yield loss. Vine and various fruit and vegetable plants thrive in the shade (see Figure 7). Even the needs of sun-loving plants can be satisfied if the agrivoltaic system has an appropriate design. This opens up opportunities to combine agrivoltaic systems with these types of plants, such as apple trees.

In addition to the profit generated from the dual use of land, agrivoltaic systems can help crops adapt to harsher weather conditions caused by climate change. As described in the previous section, overhead systems can contribute to a favourable microclimate under the panels. Evaporation can be avoided, resulting in an improved water balance and lower water consumption. The panels can also protect plants from heavy rain or hail, or conversely, shield them from too intense irradiation, which can result in fruit sunburn.

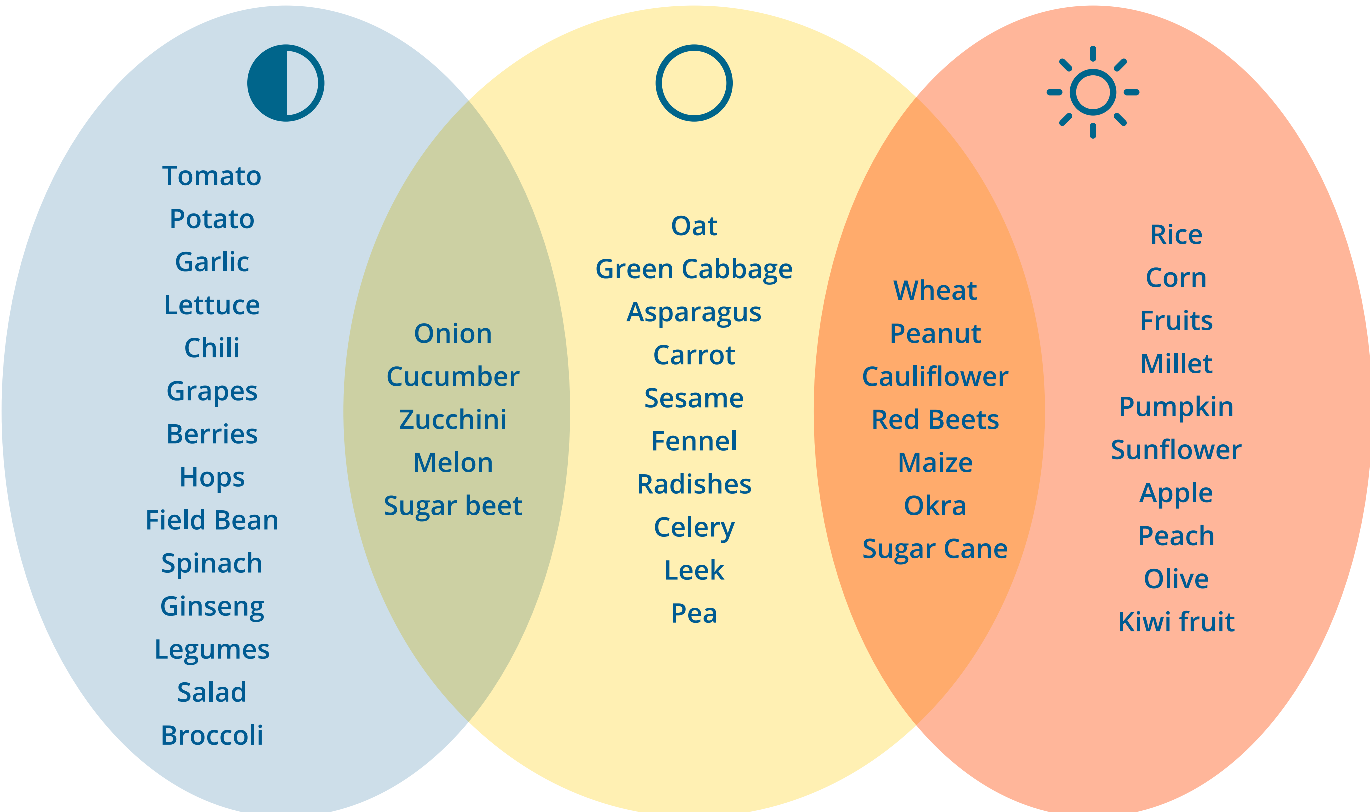

Figure 7: Plant shade tolerance (Kallioğlu et al., 2024, p. 6)

26 Mehta & Zörner, 2025, p. 11

4 Economic feasibility of agrivoltaic installations

4.1 Estimated costs for different agrivoltaic system components

The most significant cost factors in agrivoltaic systems are the PV modules, the mounting structure, and, in particular for overhead systems, the installation. The costs of PV modules vary depending on the provider and the chosen technology. Prices of between MDL 3,700 and MDL 8,500 per kW of installed capacity can be assumed.[27]

For the inverter, prices range from MDL 2,000 to MDL 5,700 MDL per kW of installed capacity.[28]

As a broad guide to the costs of the mounting system, open-field PV mounting systems typically cost between MDL 4,000 and MDL 8,000 per kW of installed capacity, and these figures can be used as a basis for further considerations.[29] The costs of the mounting structure for open-field PV and low vertical agrivoltaic systems are likely to be comparable. By contrast, the costs of the mounting structure for high overhead agrivoltaic systems are likely to increase with the height of the system.[30] These increased costs are due to the additional material needed for the higher construction as well as the need for more complex structures due to statics.[31] Further cost factors to consider are project planning and the installation.[32]

According to market providers, turnkey solutions for rooftop and ground-mounted PV installations are available at prices ranging from MDL 20,000 to MDL 33,000 per kW of installed capacity (components: photovoltaic system, inverter, electrical components, and structural elements, plus commissioning) depending on the materials and equipment used.[33] Adding energy storage systems could increase the costs by MDL 6,000 to MDL 8,000 per kW.[34]

As discussed in previous sections, there are many parameters that determine the ideal configuration of an agrivoltaic system. Agricultural yields depend on the system's technical features and the plants grown in combination with the PV system; however, agricultural yields will also vary due to weather changes from year to year. Revenues therefore cannot be estimated at this point.

4.2 PV financing schemes in Moldova

The Republic of Moldova promotes PV installations through two main support mechanisms.[35] Firstly, net metering or net billing applies to small-scale PV installations of up to 200 kW, primarily for self-consumption.[36] Under the previous net metering scheme (which was in place until 31 December 2023), surplus electricity could be fed into the grid and later offset against consumption. This effectively used the grid as a virtual battery, but it also shifted grid maintenance costs to other consumers. Since 1 January 2024, Moldova has transitioned to net billing, whereby surplus electricity is sold at the producer price, while electricity consumed from the grid is purchased at retail prices. This change better reflects grid operation costs, encourages appropriate system sizing, and promotes consumption during production periods. Pre-2024 installations are permitted to retain net metering until 2027.

27 "Panouri fotovoltaice", n.d.; "Panouri fotovoltaice/solare", n.d.; "Panouri solare", n.d.
28 "Invertoare", n.d.b ; "Invertoare", n.d.a
29 Assumption: Installation of two panels with a capacity of 0.5 kW each; Moldova Solar, 2024
30 Trommsdorff et al., 2024
31 Trommsdorff et al., 2024
32 Trommsdorff et al., 2024
33 "Kituri fotovoltaice", n.d.
34 "Acumulatori", n.d.
35 CNED, n.d.
36 Bohantova, 2023

Secondly, a fixed-price mechanism applies to larger renewable energy projects that exceed 1 MW for solar PV and 4 MW for wind farms. Capacity is allocated through competitive auctions.[37] The designated investors sign guaranteed electricity purchase contracts with the joint-stock company S.A. Energocom for a period of 15 years, starting from the commissioning date of the power plants. The average prices reached in the auctions are among the most competitive in Energocom's portfolio, with photovoltaic energy priced at around MDL 1.1679/kWh (approx. EUR 59.1/MWh) and wind energy at MDL 1.3280/kWh (approx. EUR 67.2/MWh).

Solar PV installations with a capacity ranging from over 200 kW to 1 MW are currently not included in any state support mechanism. For these installations, a private sector collaboration in the form of bilateral contracts with local energy suppliers might offer an alternative solution.

Once commissioned, these power plants will produce approximately 8.4% of Moldova's annual electricity consumption, thus contributing to national energy security, reducing CO_2 emissions, and attracting private investment of over 190 million euros, without requiring any budgetary expenditure.

In addition to the support mechanisms for using or selling the electricity generated, VAT exemptions apply to installation work for renewable energy systems (RES).[38] Furthermore, investors are permitted to develop renewable energy generation plants, with the possibility of negotiating bilateral contracts with local energy suppliers and of exporting electricity within the limits of the available transfer capacity (NTC).

Following the latest legislative changes, potential investors in RES can use agricultural land without being required to change its designation. This means that wind turbines, battery energy storage systems, photovoltaics, and biogas plants can also be built on agricultural land without any additional bureaucratic procedures.[39]

4.3 Implementation models

There are currently no agrivoltaic projects operating in Moldova. The following models assume that local utilities or PV providers will provide key services. These include installation, operation, and maintenance, as described in the models below.

4.3.1 Cooperative model

Renewable energy cooperatives are not officially defined in Moldovan regulations as renewable energy communities. The primary activities of renewable energy cooperatives vary. They can be renewable energy production cooperatives, renewable energy consumer co-operatives, or renewable energy service cooperatives.[40] When partners jointly invest in agrivoltaic systems to set up the facility and use the electricity generated, they form a renewable energy production cooperative. Typical features of a renewable energy cooperative include democratic decision-making, an organisational structure, and the availability of financial capital. The financial capital is usually a combination of membership shares.[41] The members are typically both owners and consumers of the jointly produced goods.

In the context of agrivoltaic systems, the tasks could be shared as follows within a cooperative model: As the members of the cooperative would presumably be farmers who own the land they cultivate, the PV system is jointly purchased from a PV investor with the cooperative's shared funds. As a result, the system is owned by the cooperative. As far as the maintenance and operation of the agrivoltaic system is concerned, the cooperative could either undertake these tasks itself or outsource them to an external service provider.

4.3.2 Lease model

The lease model[42] provides an alternative to the parties fully financing the agrivoltaic system themselves. In this

37 Invest Moldova Agency, n.d.
38 Green Economy Financing Facility & Agenția pentru Eficiență Energetică, n.d.
39 Republica Moldova, 2024
40 Lowitzsch & Hanke, 2019
41 Lowitzsch & Hanke, 2019
42 Rödl & Partner, n.d.

case, the farmer who owns the land leases the PV system from a PV supplier. The PV supplier can also be the local utility company. The supplier owns the agrivoltaic system and is responsible for its construction. As in other models, the farmer can use the electricity generated for their own purposes, feed it into the grid (provided a connection to the local grid is available) or do both. The farmer is responsible for the operation of the agrivoltaic system and its maintenance.

4.3.3 Hybrid ownership model

In a hybrid ownership model, tasks and ownership are usually divided between several private and public partners. Responsibilities could be divided as follows, for example: The farmer oversees land ownership and the agricultural activities, an investor finances and therefore owns the PV facility, while a technical operator sets up, operates, and maintains the agrivoltaic system.

The advantage of this hybrid model is that the parties are responsible for the tasks that they are best qualified to undertake. The disadvantages are that hybrid ownership systems are more complex and can require a long-term commitment from the parties. They also involve a high level of communication between the actors involved.

4.3.4 Renewable energy communities

Agrivoltaic systems can also be managed by a renewable energy community (REC under HANRE no. 743/2024 on the Approval of the Regulation on Renewable Energy Communities) The Act on the Promotion of Renewable Energy no. 10/2016 allows for the creation of renewable energy communities in Moldova. Within an REC, citizens, cooperatives, small and medium-sized enterprises, and municipalities collaborate to develop renewable energy systems within their local community. The primary aim is to foster environmental and social benefits for the community, such as lowering energy prices for vulnerable consumers, increasing energy independence, and reducing CO_2 emissions.

ANRE Regulation no. 743/2024 sets out the details concerning membership, internal organisation, and the rights and obligations of members and third parties, such as distribution system operators (DSOs). The regulation also provides guidance on the various steps required to register and establish a renewable energy community. Currently, the regulation allows RECs only to produce, consume, store and sell electricity (not heat) from renewable energy sources. While it is also possible in Moldova to generate electricity from renewable sources for self-consumption and feed the surplus into the grid, RECs enable energy sharing.

Typically, the members of an REC jointly own a number of renewable energy facilities, for example, solar power plants, through shares that they acquired upon joining the community. Irrespective of the number of shares held, each member has the same voting rights in the REC's decision-making. The electricity produced is shared between the members of the community; any electricity that cannot be consumed by the members is sold to the market. Under the regulation, the central electricity supplier is required to purchase this surplus electricity at the average electricity price.

Electricity sharing thereby optimises the use of electricity, as members with different consumption and production profiles work together; for example, a solar power plant on a field can generate electricity for the nearby school during the week, while on weekends it can supply a hospital or restaurants. Using battery storage can further enhance electricity usage. Since shared electricity is exempt from paying the full distribution tariffs, it can be offered at lower prices than electricity purchased from the market. In addition, prices are stable, and the savings resulting from self-consumption of the electricity generated can be reinvested in projects benefiting the community. The maximum capacity of renewable energy facilities that can be owned by an REC in Moldova is calculated by the competent DSO and depends on the electricity consumed by the members of the community: the more consumption points and the higher the electricity consumption, the better. However, the total capacity may not exceed 1 MW. Producers currently benefiting from net billing cannot become members of a REC unless they leave this mechanism.

RECs typically own the renewable energy facilities and are responsible for operating and maintaining the system.

However, there are also RECs that lease facilities from a third party, such as an investor. The characteristics of this specific ownership structure and its division of tasks depends largely on the legal form chosen for the REC and on its tasks as defined in its statute.

Currently, there are no RECs registered in Moldova; however, as part of a pilot programme, several municipalities are currently working on concepts for RECs.

Table 2: Ownership models for task sharing in an agrivoltaic system

Tasks ↓	Implementation models →	Cooperative model	Lease model	Hybrid ownership	Renewable energy communities
Land ownership		Farmers	Farmers	Farmers	REC, REC members, or alternatively, land could be leased
Agricultural management		Farmers	Farmers	Farmers	REC, REC members, or farmers
Provision of the PV system		PV investor	PV supplier / utility	Investor	PV investor
Ownership of the PV system		Farmers	PV supplier / utility	Investor	REC or PV investor
Operation of the PV system		Farmers or external provider (technical operator)	Farmer	Technical operator	REC
Maintenance of the PV system		Farmers or external provider (technical operator)	Farmer	Technical operator	REC

5 Sample projects

Figure 8: Bifacial tracking system by Intech GmbH & Co. KG above fruit trees

Germany:
Across Germany, Agri-PV systems are being tested on a variety of farms, including vineyards, fruit orchards, vegetable fields, permanent pastures, and grain production areas. For instance, in the south-western state of Baden-Württemberg, the Model Region Agri-PV BW project is conducting numerous pilot studies to explore how solar energy generation can be integrated with agricultural production.[43] A notable example within this project is the farm Obsthof Vollmer,[44] situated in the Ortenau region of Middle Baden, which is one of Germany's leading areas for fruit and berry cultivation. In 2023, the farm installed the project's second Agri-PV pilot system. The five-hectare operation produces apples, pears, plums, kiwis, kiwiberries, and blackberries using conventional methods, as well as cultivating small areas of vineyards. The installation, designed and built by Intech GmbH & Co. KG, consists of three components: a berry tunnel with static, semi-transparent modules (0.2 ha), a fixed opaque-module system for espalier fruit (0.5 ha), and a sun-tracking opaque-module system for espalier fruit (0.8 ha). This combination of diverse crops and adjustable, fully shading PV technology is unique within the project. The tracking system was refined to meet the specific needs of fruit cultivation in cooperation with Fraunhofer Institute for Solar Energy Systems ISE and the agricultural technology centre LTZ Augustenberg.

Another example within the model region in Baden-Württemberg is the facility operated by the State Institute for Viticulture and Oenology.[45] Viticulture has a long tradition in the region. Overhead agrivoltaic systems have been installed across an area of 0.5 ha. The goal is to protect the plants from extreme weather events. The area includes different systems: firstly, a static bifacial semi-transparent system and, secondly, a tracking system, which follows the sun over the course of the day. The systems have a total installed capacity of 268 kilowatt-peak (kWp).

In the north of Baden-Württemberg, a large agrivoltaics facility with vertical bifacial panels also forms part of the Model Region Agri-PV BW.[46] The agrivoltaic system is installed on an area of 8.8 ha and has a capacity of 2,974 kWp. At least 8 to 14 m space is left between the rows of vertical panels to ensure that large agricultural machines are able to pass through. The area is used for grassland and arable farming.

43 Fraunhofer ISE, 2023a
44 Fraunhofer ISE, 2023b
45 Fraunhofer ISE, 2023c
46 Fraunhofer ISE, 2023d

Figure 9: Sample vertical interspace system at Energiepark Neusaß II. Image: Gerd Herold

Romania:

In June 2023, InterNET SRL, which is part of the OFRIM Group, commissioned Romania's first two Agri-PV systems – one for strawberries and one for raspberries and blackberries.[47] Developed in collaboration with the Băneasa Fruit-Tree Research and Development Station, the strawberry installation was unveiled at the Moara Domnească Experimental Base in Afumați, marking a first for Romania and Southeast Europe. The system employs semi-transparent PV panels (with 49% and 77% transparency) over three shading zones to study the impact on humidity, temperature, and crop yields. Equipped with AI-driven hybrid inverters, battery storage, and Internet of Things (IoT)-based monitoring, it integrates renewable energy production with precision horticulture.

47 "Romania: First agrivoltaics systems launched", 2023

6 Conclusion – Step-by-step guidance

The following flow charts have been simplified for ease of understanding. Using them may not necessarily lead to a perfectly suited system for the chosen location. They serve merely as a summary of this fact sheet and as an initial guide.

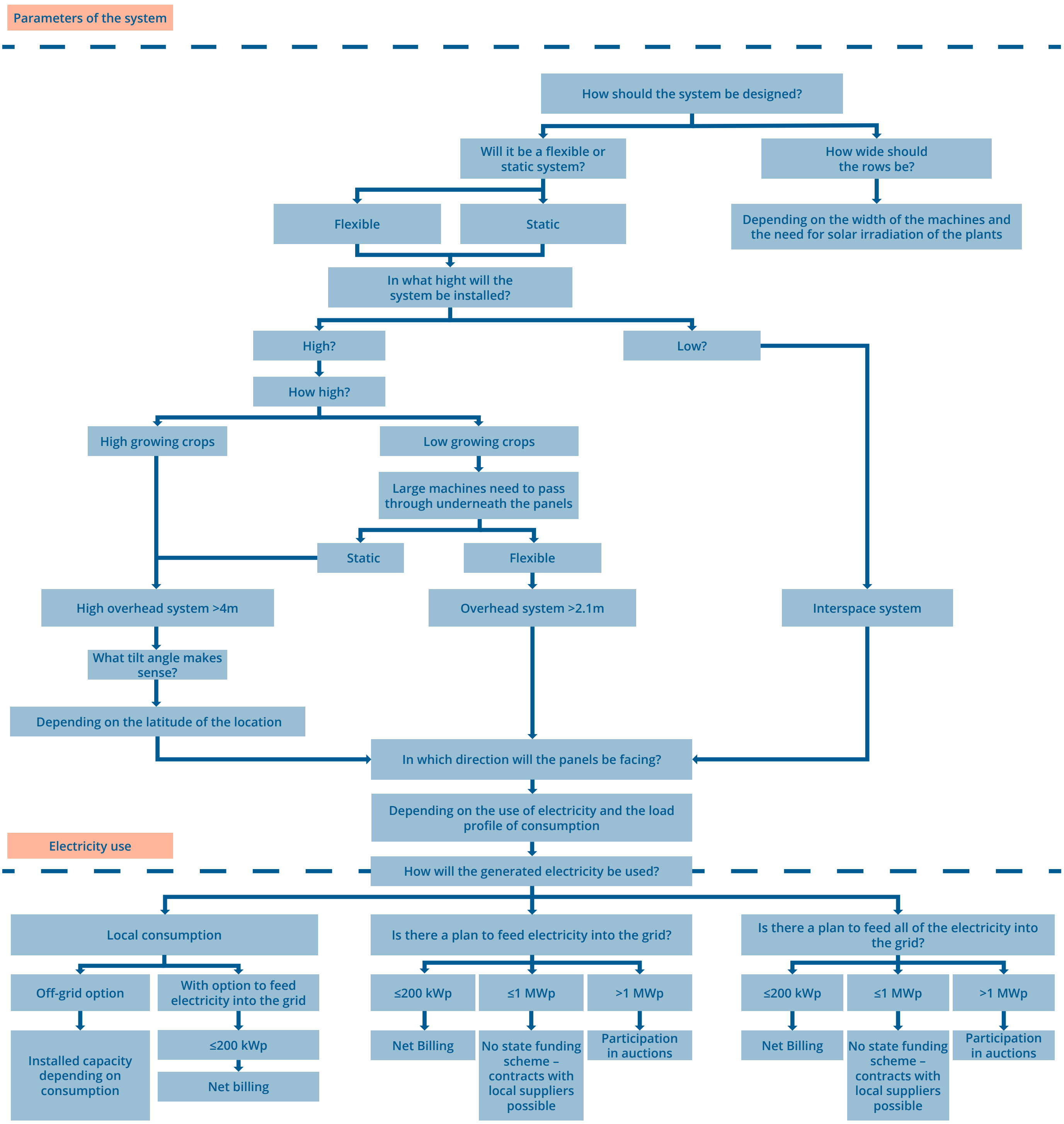

Figure 10: Simplified guide to planning an agrivoltaic system

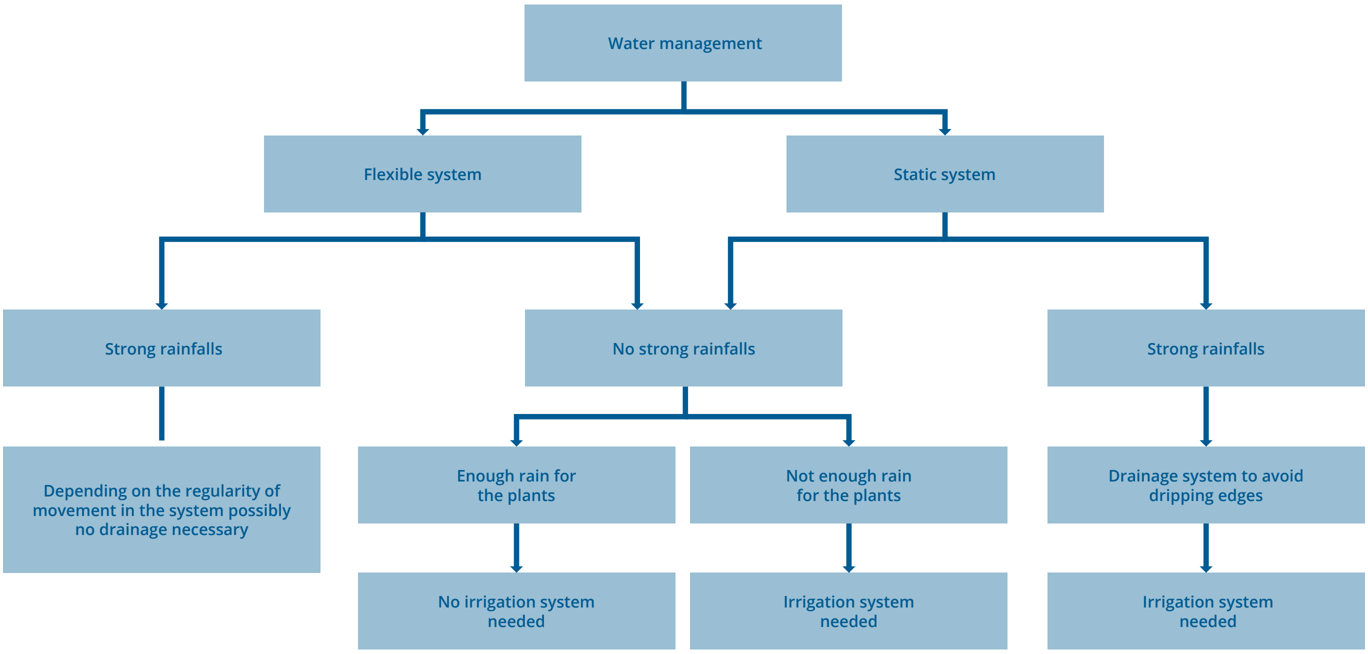

Figure 11: Simplified guide to planning water management in an agrivoltaic system

7 Tools, resources and further information

- Guidelines, studies, and further insights:
  - The Fraunhofer ISE Agrivoltaics Guideline provides a detailed overview of the factors to consider in the context of an agrivoltaic system: https://www.ise.fraunhofer.de/en/publications/studies/agrivoltaics-opportunities-for-agriculture-and-the-energy-transition.html
  - In Japan, agrivoltaic systems are being implemented under the "solar sharing" principle. The country is striving to introduce more agrivoltaic systems due to its limited land area and as part of its drive for higher energy self-sufficiency: https://www.renewable-ei.org/en/activities/reports/20250618.php
  - Solar Power Europe has published a handbook on agrivoltaics. It examines different aspects of the topic in-depth and provides insights into existing regulations in Europe: https://www.solarpowereurope.org/insights/thematic-reports/agrisolar-handbook-1
  - The following article is a scientific deep dive into the optimal tilt angle for agrivoltaic systems: https://www.sciencedirect.com/science/article/pii/S2214157X24000297?via%3Dihub
- Conference: Intersolar Europe is an annual exhibition held in Munich, Germany. It focuses on various innovations currently under way in the field of photovoltaics. Agrivoltaics is also an important focus topic at the event: https://www.intersolar.de/exhibition-quick-facts?lang=en

- Contact point for further information on agrivoltaic systems in Moldova: Centrul Național pentru Energie Durabilă (CNED)

- German companies specialising in agrivoltaics
  - Next2Sun: https://next2sun.com/en/agripv/
  - Intech: https://intechcleanenergy.com/produkte/agrivoltaic-systems/
  - sbp sonne: https://www.sbp.solar/agricultural-pv/?lang=en
  - SUNfarming: https://sunfarming.de/en/business-areas/agri-and-eco-solar-plants
  - Zimmermann: https://pv-agri.de/en/

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