

Multicountry Agrivoltaics Project



Funded by
the European Union

Technical Assistance: Pre-feasibility study to analyze agrivoltaic solutions

Location: Togo, Democratic Republic of Congo, Guinea, Senegal

Solution: Agrivoltaic systems combining solar power with agriculture

UNEP CTCN grant: USD 250,000



UNEP-CTCN

The global rise in electricity demand intensifies competition for agricultural land and leads to deforestation. Agrivoltaic systems, which combine photovoltaic energy production with agricultural activities, offer a promising solution. These systems can be integrated into existing PV installations or designed for co-production of crops and energy, enhancing land-use efficiency and providing additional income for farmers.



Objectives

- Pre-feasibility study to analyze deployment of systems that optimize land use for both energy generation and food production
- The study evaluates environmental, technical, and socio-economic viability, crop types, business models, and policy frameworks for solar-powered agriculture solutions



Social Impact

- Livelihood diversification: Farmers can earn from both agriculture and electricity
- Food security: Shaded crops benefit from improved microclimates
- Gender inclusion: Women and vulnerable groups actively involved
- Rural development: Electrification of communities and agro-processing facilities



Climate Impact

- Improved land-use efficiency under climate stress
- Enhanced resilience of crops through shading and moisture retention
- Reduced greenhouse gas emissions via clean energy
- Strengthened irrigation and post-harvest storage systems



Beneficiaries

- Targeted stakeholders include rural farmers, women, youth, and off-grid communities.
- The project aims to empower these groups through access to dual-income systems, training, and enhanced food and energy security.



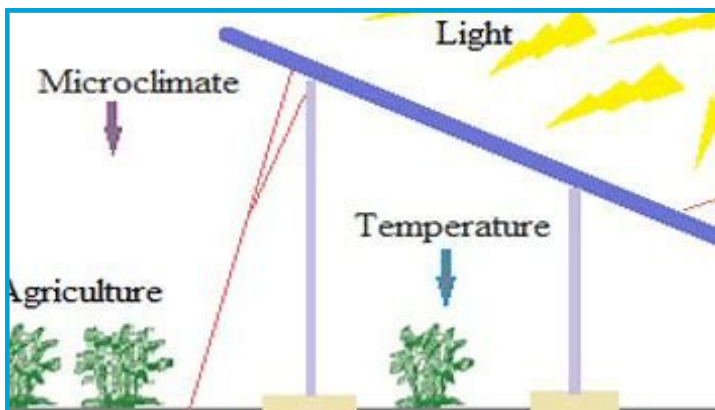
Other Co-Benefits

- Reduced land-use conflicts between energy and farming
- Support for climate policy development
- Mobilization of international finance
- Capacity-building and data generation for decision-making



Innovation & Technology

- Agrivoltaic systems integrating solar PV with agriculture
- Rainwater harvesting and smart shading
- Custom system architecture per country
- Post-harvest solar refrigeration and irrigation
- Dual land use design for energy and crops



Replication Potential

- The project shows great potential for scalability by piloting the recommendations provided by this feasibility study, and testing agrivoltaics in locations recommended by the study.
- It will inform national strategies and enable replication across similar climatic zones.

Key Figures

- USD 250,000 project budget
- 4 countries involved: Togo, DRC, Guinea, Senegal
- Multiple sectors targeted: agriculture, energy, gender, environment
- High replication potential across West and Central Africa
- Policy and funding readiness to scale up through GCF, World Bank
- The project contributed to the following SDGs:

