

MIRRA

Methods for Irrigation and Agriculture

MIRRA and SMARTWALL Collaborate to Pilot and Integrate Innovative Semi-transparent Photovoltaic Modules into Greenhouse Agriculture in Jordan



Graduation of the First Cohort in the Climate-Smart Agriculture Technologies Program



Profiles of Select-Graduates from the First Cohort of the Climate-Smart Agriculture Technologies Capacity Building Program Program



MIRRA, AVSI and NARC-Aqaba Collaborate to Support the Livelihood of Vulnerable Communities in Southern Jordan



MIRRA and SMARTWALL Collaborate to Pilot and Integrate Innovative Semi-transparent Photovoltaic Modules into Greenhouse Agriculture in Jordan

Samer Talози and Ammar Namarneh

MIRRA and SMARTWALL, a private company in France, are working together under the current PRI-MA-funded project and titled:

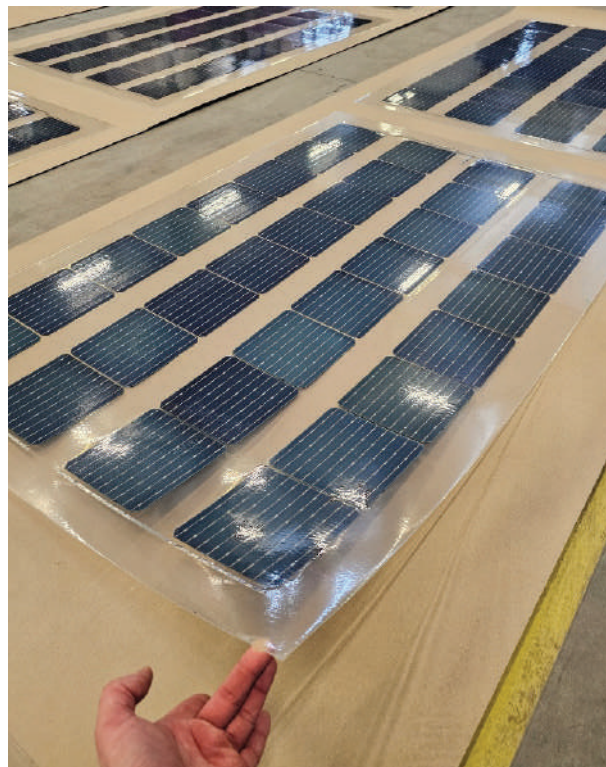
“Improvement of Mediterranean greenhouses performance using innovative plastic materials, natural additives and novelty irrigation technologies (AZMUD)”, which also includes partners from Spain, Turkey, and Egypt, and aims to increase the yields and reduce the costs of greenhouses in the Mediterranean region by incorporating innovative technologies.

Researchers at SMARTWALL developed semi-transparent photovoltaic panels that can produce solar energy without blocking the light that the plants need inside the greenhouse.

Such semi-transparent photovoltaic systems can be mounted on the roofs and/or walls of greenhouses. As such, they can provide, at the same time, a source of renewable energy and a tool to control solar irradiation in the greenhouse.

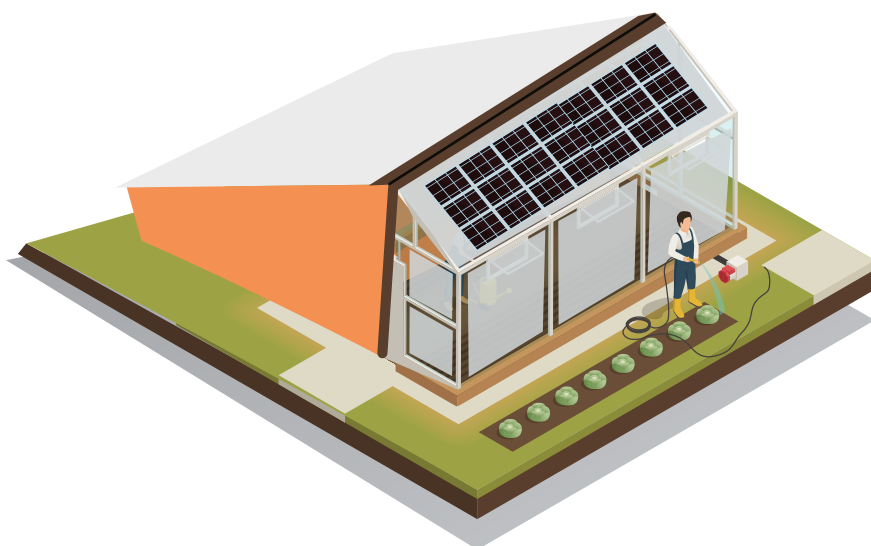
The newly developed panels consist of two layers; the front sheet uses a 50 μm thin and highly transparent polymer while the back sheet is made of a 250 μm thin structural polymer.

An additional reinforcement structure is added to the back sheet to increase mechanical strength and durability. These panels are made to be semi-flexible and transparent with a 30% light transmission ratio.



Semi-transparent photovoltaic solar panels developed by SMARTWALL for testing at MIRRA's Climate-Smart Farm in the Jordan Valley.

At MIRRA's Climate-Smart Farm in the Jordan Valley, we will pilot, test and evaluate the newly developed solar panels at our soilless greenhouse. The impact of this technology on solar energy production and crop development will be monitored throughout the growing season. This activity is part of the PRI-MA-funded AZMUD project (www.azmud.eu).



A schematic diagram of our greenhouse in the Jordan Valley.

Graduation of the First Cohort in the Climate-Smart Agriculture Technologies Program

Timothy Purvis and Samer Talazi

The first cohort of Jordan and Syrian youth participants in the EU-funded EduSyria Nuffic Climate - Smart Agriculture program have successfully completed their field trainings this past month and received diplomas for completing this capacity building program which spanned over 3 months. In their field training, participants learned how to maintain and monitor drip irrigation systems and how to integrate those systems with smart technologies such as fertigation units, irrigation controllers and solar pumps. Now that they have completed their training, they are ready to expand their work in the agriculture sector in the Jordan Valley region (for the Jordanian youth group) and the Highlands (for the Syrian Refugees group).

The cohort valued the program focus on modernizing irrigation systems, and while they found those topics complicated at first, they were enthusiastic to learn the design, operation and maintenance of drip irrigation systems. The participants also enjoyed the hands-on nature of the work, as they felt that it built the long-term skills needed to succeed as an entrepreneur in the agri-tech sector of Jordan. The

cohort mentioned the usefulness of English and computer courses, taught by program partners at the Applied Sciences University. After completing the program, many of our participants are either exploring starting new agricultural service companies or returning to their old companies with the new techniques they have learned after their trainings. One participant, Nouredine Sbitan, mentioned that a focus of his would be on “building up the use of smart irrigation systems to improve efficiencies of farms and reduce wasteful water use in the Jordan Valley”.



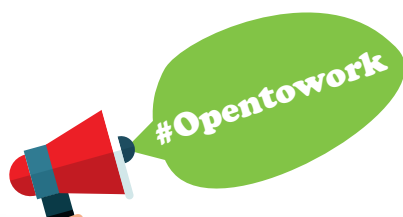
The second phase of this EU-funded EduSyria program will begin in the following months, with a focus on apprenticeship programs that may lead to further careers in the local agriculture sector for new and previous participants. To hear more about the progress of participants, follow MIRRA on LinkedIn and Facebook.

nuffic
meet the world

Jordanian and Syrian youth celebrate their completion of the capacity building program at MIRRA

Profiles of Select-Graduates from the First Cohort of the Climate-Smart Agriculture Technologies Capacity Building Program Program

Samer Talazi and Timothy Purvis



Mohammed Al-Dalky (28)
Tawjihi in Agriculture

Based in Northern Jordan Valley
"The most challenging and rewarding part of this program was learning about the filter and maintenance routine to keep a farm well managed."



Nouredine Sbitan (23)
Tawjihi in Agriculture

Based in the Jordan Valley
Was excited to learn how to prepare irrigation systems and is looking forward to starting a business on modern irrigation.



Lara Grofe (19)
Tawjihi in Agriculture

Based in Northern Jordan Valley
"I found the English and computer classes most helpful for starting a business, but was excited for the hands-on trainings."



Jaafar Khaled (22)
Bachelor's Degree in Nutrition

Based in Northern Jordan Valley
Enjoyed learning water quality measurements and how to maintain irrigation systems.



Fadwa Sbitan (28)
Bachelor's Degree in Agricultural Engineering

Based in Northern Jordan Valley
Is excited to apply her new knowledge of irrigation networks and modern methods to local agriculture programs.

To contact any of the above young professionals for job opportunities, please contact us at: info@mirra-jo.org

To hear the stories of each participant please check the new short movies on MIRRA's

youtube channel: <https://www.youtube.com/@mirra1643/videos>

MIRRA, AVSI and NARC-Aqaba Collaborate to Support the Livelihood of Vulnerable Communities in Southern Jordan

Samer Talazi

Activities of the project: "Support for Employment and Entrepreneurship in the Cultural, Agricultural and Tourism Heritage Chain in the Governorates of Mafraq, Ma'an and Aqaba" which aims to boost employment and entrepreneurship in several Jordanian governorates started earlier this year. This initiative is conducted by MIRRA, in cooperation with the Italian Association of Volunteers in International Service (AVSI) and the National Agricultural Research Center (NARC), as part of a funded project by the Italian Agency for Development Cooperation (AICS).



The project aims to achieve several objectives: First, to improve access of vulnerable Jordanians and Syrians to rapid employment programs, training in line with decent work standards and local development plans. Second, to strengthen the capacity of cooperatives and community associations, public and private bodies to

plan and implement sustainable economic initiatives in the cultural tourism and agricultural sectors. And, last, to launch and support self-employment and sustainable entrepreneurial economic activities in the cultural and agricultural tourism chain.

Under this project, MIRRA will focus on the remote town of Al-Quweirah in the governorate of Aqaba, south Jordan with about 34,500 residents. This community is in dire need for supportive development programs to reduce unemployment, improve food security, and resilience in face of climate change and the increasing water stress.

MIRRA will oversee the installation of two greenhouses; the first will be used by the community for the production of leafy vegetables, which are not readily available in that locality, and usually

are transported from Amman 280 kilometers away. The second smaller greenhouse will be used to produce seedlings of the most commonly used vegetables and herbs by the community. The seedlings will then be shared by the community members for their home gardens and also to a community garden that was established as part of this project.

In the coming months, MIRRA will conduct on-the-job training for community members on innovative and practical drip irrigation systems operation and maintenance – this will ensure that the community will be able to run the greenhouses on



their own beyond the lifetime of the project. Furthermore, MIRRA will train select community members on entrepreneurship and small projects that has the potential of increasing income and improving livelihoods.

The land for this project was donated by the municipality of Qweireh. And water is provided by a nearby filtered water bottling factory. The factory's reject water is collected and used for irrigation; it will need to be mixed with a fresh water resource to reduce its salinity.

Stay tuned for more updated from this project in the coming newsletters.

Introducing Tobias: Brown University Student and MIRRA Intern

Exciting news! MIRRA is thrilled to introduce Tobias, a Brown University student who joined our team in Amman earlier this year. Tobias is studying Applied Mathematics and Economics at Brown University and is currently concluding a studying-abroad semester in Jordan, where he is deepening his understanding of the Arabic language and exploring political and social topics-related to the Middle East. At MIRRA, Tobias is helping us analyze data on imports, exports, production, and consumption of agricultural products in Jordan. He is also planning to continue his research with us, building a prediction model that will help MIRRA understand and forecasts trends for irrigation water demands in the future.



Thank you for all your hard work and contributions, Tobias!

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