Cactus Pear for Sustainable Livelihoods in the Drylands

Cactus pear a drought-tolerant crop, provides food and livestock feed and thereby improves the livelihood of poor farmers in the dry areas.

In collaboration with the FAO-ICARDA cactus network and NARS partners to promote and scale up cactus pear as a crop well-adapted to agricultural farming in the dry areas, that can be utilized by millions of poor farmers for important nutritional and income-creating purposes. Being a versatile crassulacean acid metabolism (CAM) with an extraordinary water use efficiency makes it a viable resilient important agricultural resource that enable farmers getting valuable products, including fruits for human consumption and fodder for livestock while helping to reduce the need for watering livestock due to its high-water content. This collaboration led to a substantial increase in demand for planting materials, resulting in providing improved planting materials, that can serve different agro-ecological zones. ICARDA alongside its NARS partners, has also carried out extensive awareness campaigns and capacity development activities to train farmers on promoting cactus pear as a multi-functional crop.

INNOVATION TYPOLOGY

Technological Innovation
Innovations of technical/material nature, including varieties/breeds; crop and livestock management practices; machines; processing technologies; big data and information systems.

Other Innovation
Innovations different from what could be described as incremental, radical or disruptive innovation.
This innovation is expected to contribute to the following impacts:

<table>
<thead>
<tr>
<th>CGIAR Impact Areas and Collective Global Targets</th>
<th>SDGs and SDG Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nutrition, health &amp; food security</td>
<td>Achieve gender equality and empower all women and girls</td>
</tr>
<tr>
<td>Poverty reduction, livelihoods &amp; jobs</td>
<td>Take urgent action to combat climate change and its impacts</td>
</tr>
<tr>
<td>Gender equality, youth &amp; social inclusion</td>
<td>Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss</td>
</tr>
<tr>
<td>Climate adaptation &amp; greenhouse gas reduction</td>
<td>Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels</td>
</tr>
<tr>
<td>Environmental health &amp; biodiversity</td>
<td>End poverty in all its forms everywhere</td>
</tr>
<tr>
<td></td>
<td>End hunger, achieve food security and improved nutrition and promote sustainable agriculture</td>
</tr>
</tbody>
</table>

Learn more: [https://www.cgiar.org/how-we-work/strategy](https://www.cgiar.org/how-we-work/strategy)

CGIAR Initiatives, Partners and Geoscope

**CGIAR Lead Initiative**
- Livestock and Climate

**CGIAR Contributing Initiative(s)**
- Fragility to Resilience in Central and West Asia and North Africa
- Sustainable Animal Productivity

**Contributing Bilateral Projects**
- ICARDA-ICAR (India) Collaborative Program

**Partners Involved**
- **FAO-ICARDA CactusNet** – An international technical cooperation network on cactus - Scaling, Innovation partner
- **UNIPA** – Università degli Studi di Palermo (Italy) - Scaling, Innovation partner
- **ICAR** – Indian Council of Agricultural Research (India) - Scaling, Demand partner
- **IGFRI** – Indian Grassland and Fodder Research Institute (India) - Demand, Scaling partner
- **NARC** – National Agricultural Research Center (Jordan) - Scaling, Demand partner
- **OEP** – Office de l’Eleveage et des Pâturages (Tunisia) - Scaling, Demand partner

This innovation is developed, tested and/or scaled for/in the following regions:

- Northern Africa
- Western Asia
- South Asia

Learn more: [https://sdgs.un.org/goals](https://sdgs.un.org/goals)
PROVEN INNOVATION
The innovation is validated for its ability to achieve a specific impact under uncontrolled conditions

UNCONTROLLED TESTING
The innovation is being tested for its ability to achieve a specific impact under uncontrolled conditions

PROTOTYPE
The innovation is validated for its ability to achieve a specific impact under semi-controlled conditions

SEMI-CONTROLLED TESTING
The innovation is being tested for its ability to achieve a specific impact under semi-controlled conditions

MODEL/EARLY PROTOTYPE
The innovation is validated for its ability to achieve a specific impact under fully-controlled conditions

CONTROLLED TESTING
The innovation is being tested for its ability to achieve a specific impact under fully-controlled conditions

PROOF OF CONCEPT
The innovation’s key concepts have been validated for their ability to achieve a specific impact

FORMULATION
The innovation’s key concepts are being formulated or designed

BASIC RESEARCH
The innovation’s basic principles are being researched for their ability to achieve a specific impact

IDEA
The innovation is at idea stage

CURRENT INNOVATION READINESS

Innovation Readiness justification
We selected innovation readiness level 7 (prototype) for the cactus pear because the technology is already validated under certain conditions in North Africa, Western Asia, and Southern Asia. We are planning to investigate its adaptation across other geographic locations.

Evidence supporting the Innovation Readiness level

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Citation

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We would like to thank all Funders who support this innovation through their contributions to the CGIAR Trust Fund (https://www.cgiar.org/funders/).

More Information

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More Information