

FRD CLIMATE SMART AGRICULTURE INITIATIVE

Resource Efficient Food Production in Pakistan

Foundation for Rural Development

FRD adopts a multidisciplinary approach to meet the pressing needs of vulnerable populations, focusing on fostering resilience, self-sufficiency, and sustainable livelihoods. Through focused interventions and tackles key areas such as Climate Change Adaptation, Disaster Risk Reduction, Health, WASH, Education, Protection, Gender Mainstreaming, and Livelihood Development.

Leveraging a network of strategic partnerships and active engagement in international forums, FRD merges local knowledge with global best practices to deliver impactful, community-driven programs.

GEOGRAPHICAL LANDSCAPE OF FRD

FRD's extensive outreach spans across diverse regions, including Peshawar, Dera Ismail Khan, Buner, and the broader landscapes of Khyber Pakhtunkhwa (KP). Our footprint extends to Tribal Districts such as Kurram, Mohmand, Khyber, South Waziristan, Orakzai and Dir Upper. We engaged in humanitarian initiatives in districts like Charsadda, Mardan, Abbottabad, Haripur, and others. From South Waziristan to Bara in Khyber Agency and even into Punjab, including Rawalpindi and Lahore Districts, FRD's impact covers a vast geographical expanse, demonstrating our commitment to addressing diverse community needs.

FRD CLIMATE-ADAPTED FARMING SOLUTIONS

Climate-**S**mart **A**griculture (CSA) is a comprehensive approach to address food security and climate change resilience by focusing on three pillars:

1. **Productivity:** Increasing agricultural yields sustainably.
2. **Resilience:** Enhancing the capacity of agricultural systems and communities to adapt to climate impacts.
3. **Mitigation:** Reducing greenhouse gas (GHG) emissions where feasible.

Foundation for Rural Development (FRD) is advancing Climate-Smart Agriculture through its ongoing project, **Resource Efficient Food Production in Pakistan**. This initiative supports smallholder farmers and local agricultural workers by promoting resource-efficient practices that closely align with the core goals of CSA.

Major activities of the project

- 305 smallholder farmers were selected through assessment.
- 305 tunnels were established
- All farmers were trained in tunnel farming.
- Arranged Exposure Visit- Field Days for project beneficiaries
- Inputs were supplied
- Formed VDCs of Farmers and WhatsApp groups were created for quick response and follow-up
- Manual, IEC materials and Crop Calendar in locally understandable language were developed and distributed among 500 farmers.
- 50 agriculture extension workers were trained through ToT for cascading training
- Further 275 extension workers were trained through cascading by the master trainers
- 50 input suppliers were trained and linked with farmers.
- ToT manual was developed for Extension workers.

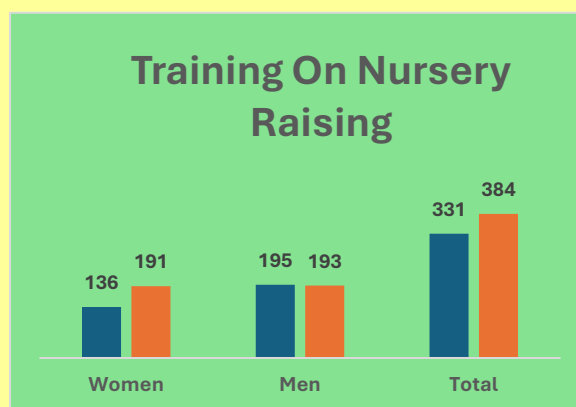
Project Interventions and CSA Correlations

Project interventions and its specific CSA impacts.

1. Training and Capacity Building

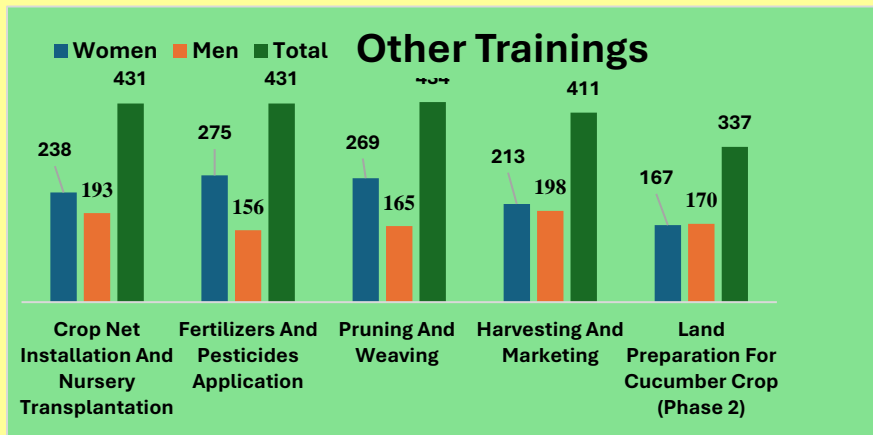
Intervention Description:

The project organized workshops and hands-on training sessions for farmers on sustainable farming methods. Training included climate-resilient practices, crop management, and efficient resource utilization.

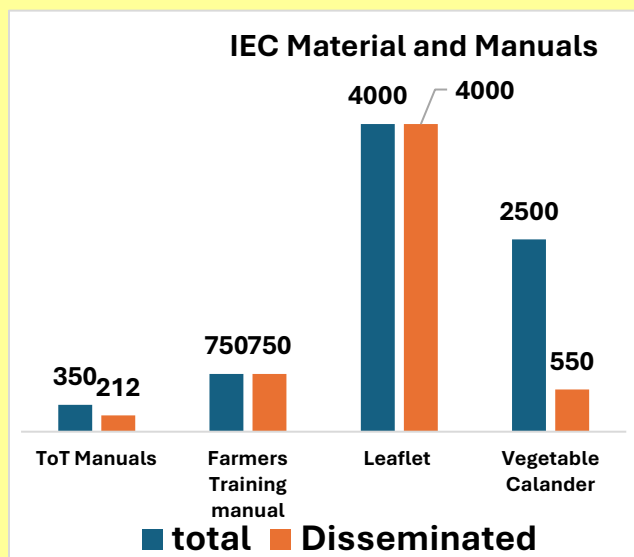


CSA Impact:

- **Productivity:** Training equipped farmers with skills to increase crop yields through climate-resilient practices.



- **Resilience:** Farmers developed the knowledge and confidence to respond to climate challenges, reducing vulnerability.
- **Mitigation:** Adoption of sustainable techniques reduced the need for chemical inputs, lowering GHG emissions.

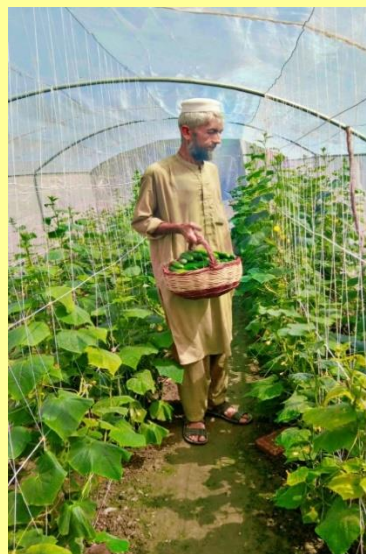


peri-urban areas.

2. Promotion of Tunnel Farming

Intervention Description:

The project promoted tunnel farming techniques that optimized land use and increased productivity, particularly useful in space-limited urban and



CSA Impact:

- **Productivity:** Tunnel farming maximized land use efficiency, allowing higher yields per unit area.
- **Resource Efficiency:** This method minimized input use (water, fertilizers) by creating controlled environments.
- **Resilience:** Adaptable to diverse climate conditions, vertical farming is highly suited to urban settings where conventional agriculture is challenging.

3. Resource Efficiency Measures



Intervention Description:

Resource efficiency included adopting water-saving techniques, optimized input use, and recycling organic waste for fertilizers.

CSA Impact:

- **Resilience:** Water-efficient practices and organic inputs made agriculture more resilient to drought and market fluctuations.
- **Mitigation:** Reduced use of synthetic fertilizers and pesticides lowers GHG emissions

and reliance on external inputs.

- **Water Conservation:** Critical in water-scarce regions, water-saving techniques preserved this essential resource.

4. Extension Support for Agricultural Workers

Intervention Description:

The project included training for agricultural extension workers to disseminate CSA practices, enabling them to share knowledge with a broader community.

The first workshop, held from February 26-28, was attended by 25 participants, including field assistants, agriculture officers, and other agricultural staff. The second workshop took place from May 22-24, with 33 attendees from similar backgrounds. Both sessions focused on equipping field staff and agriculture officers with advanced techniques and knowledge to improve resource-efficient food production and climate-smart practices within their communities.



CSA Impact:

- **Scalability:** Extension workers can educate more farmers, enhancing the reach of CSA techniques.
- **Knowledge Transfer:** Establishes a community-wide knowledge base on sustainable practices.
- **Community Resilience:** Strengthens local networks and support systems, enhancing resilience to climate change.

5. Engagement with Private Sector for Sustainable Inputs and Market Access

Intervention Description

The project collaborated with private sector suppliers to ensure the availability of sustainable inputs and to facilitate market access for farmers. On February 26, 2024 a seminar was organized to build the capacity of Agriculture Input Suppliers of District Peshawar”. About 30 participants attended the seminar, shared their views and hurdles regarding Tunnel Farming.







CSA Impact:

- **Enhanced Market Access:** Enabled farmers to achieve economic stability through reliable market channels.
- **Sustainable Inputs:** Provided eco-friendly agricultural products that support sustainable farming practices.
- **Resilient Value Chains:** Developed robust agricultural value chains, essential for climate resilience.

Alignment of Project Interventions with CSA Objectives

The following table highlights how each intervention aligns with the core CSA goals

Project Intervention	CSA Goal - Productivity	CSA Goal - Resilience	CSA Goal - Mitigation
			
Training and Capacity Building	✓	✓	✓
Promotion of Vertical Farming	✓	✓	✓
Resource Efficiency Measures	✓	✓	✓
Extension Support	✓	✓	
Private Sector Engagement	✓	✓	

Key Impacts and Expected Outcomes

The project's CSA-oriented interventions are expected to produce significant, long-term benefits:

- **Improved Food Security:** Enhanced agricultural yields and efficient production will help meet local food demand.
- **Climate Resilience:** Farmers will be better prepared for climate impacts such as droughts, floods, and market instability.
- **Environmental Sustainability:** By reducing GHG emissions, optimizing resource use, and conserving water, the project minimizes environmental impact.
- **Economic Empowerment:** Improved productivity and market access contribute to the financial stability of smallholder farmers.



Lessons Learned and Recommendations

Lessons Learned:

- **Adaptability:** CSA practices should be customized to local conditions and climate challenges.
- **Continuous Training:** Long-term success depends on ongoing education for farmers and extension workers.
- **Policy Alignment:** Policies supporting sustainable agriculture and resource efficiency are essential for scalability.

Recommendations:

- **Scale Successful Models:** Expand successful practices to other regions with similar climate vulnerabilities.
- **Leverage Digital Platforms:** Use technology to provide ongoing support and monitoring.
- **Enhance Community Participation:** Engage local communities to create a supportive environment for CSA practices.



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Website: www.frd.org.pk

Email: info@frd.org.pk

Facebook: <https://www.facebook.com/FRDPAK>

Ph: 091-5702378