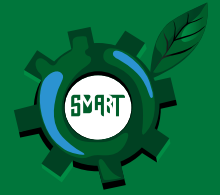




**PKSF**

# ENFOQUE

Sustainable Microenterprise and Resilient Transformation (SMART) Project | PKSF  
High-Value Crops | January 2026



## FARMING FUTURES: CLIMATE-RESILIENT RECP FOR HIGH-VALUE CROPS

### THE FUTURE IS SMART, SUSTAINABLE & PROFITABLE

High-value crops require precision farming while sustainability demands efficiency. Rising input costs, climate variability, and increasing pressure on natural resources are reshaping the horticulture sector. Under PKSF's SMART Project, Resource-Efficient and Cleaner Production (RECP) interventions are being implemented to help farmers transition toward environmentally responsible, resource-efficient, and economically viable farming practices.

These interventions focus on optimizing the use of materials, water, energy, and waste while reducing pollution and production losses. Implemented across key horticulture clusters by PKSF and its Partner Organizations, the RECP approach enables farmers to improve productivity, lower costs, and strengthen climate resilience. Progress is tracked through clearly defined Environmental Key Performance Indicators (EKPIs) to ensure measurable and scalable impact.



### SILAGE-MAKING FROM PINEAPPLE RESIDUES




Silage-making technology helps pineapple growers in Bangladesh use residues such as peels, cores, crowns, and rejected fruits as livestock feed. These materials are chopped, mixed with dry matter, and preserved through airtight fermentation. The process reduces waste and feed shortages and lowers environmental pollution. PKSF supports this practice through the SMART Project. The project promotes Resource-Efficient and Cleaner Production by providing finance, technical support, and capacity building.



In Madhupur, Tangail, an entrepreneur is making silage from pineapple residues using modern silage choppers.

### INTEGRATED PEST MANAGEMENT

Through the SMART Project intervention, farmers are supported to reduce dependency on chemical pesticides—lowering production costs, protecting ecosystems, and ensuring food safety—by adopting Integrated Pest Management (IPM) practices that promote cost-effective, biological, and physical pest control methods.

Pheromone Traps	Color/Sticky Traps	Solar Light Traps
		
<b>Benefits</b> Significantly reduces chemical pesticide use by disrupting pest mating cycles.	<b>Benefits</b> Controls flying pests without chemical intervention.	<b>Benefits</b> Effective control of nocturnal pests.
<b>Cost</b> BDT 3,000 approx. per acre (one season)	<b>Cost</b> BDT 1,500-3,000 approx. per acre (one season)	<b>Cost</b> BDT 3,000-5,000 approx. per acre (one season)

## WATER USE EFFICIENCY TECHNIQUES

Efficient water management is critical for high-value crops, particularly in water-stressed and salinity-prone regions. RECP-supported irrigation practices ensure optimal water use while maintaining soil health and stable crop yields through the interventions of the SMART Project. These practices reduce water losses, improve irrigation efficiency, and enhance crop resilience to climate variability. As a result, farmers benefit from lower production costs and more sustainable, climate-smart agricultural systems.

### Drip Irrigation



#### Benefits

Saves 60–70% water while delivering moisture directly to plant roots.

#### Cost

**BDT 20,000–30,000 approx.** per acre

### Mulching



#### Benefits

Retains soil moisture, reduces evaporation, and suppresses weeds.

#### Cost

**BDT 3,000–5,000 approx.** per acre

### Hose Pipe Irrigation



#### Benefits

Minimizes water wastage and electricity cost compared to flood irrigation.

#### Cost

**BDT 4,000–5,000 approx.** per acre

## WASTE MANAGEMENT: TURNING RESIDUE INTO RESOURCES

Crop residues and organic waste, when unmanaged, contribute to environmental pollution and increased disease risks. RECP promotes circular economy solutions that convert organic waste into valuable agricultural inputs through the interventions of the SMART Project. These practices improve soil fertility, reduce reliance on chemical fertilizers, and support environmentally sustainable farm management.

### TRICHO-COMPOST PLANT



At a Tricho-compost plant in Tangail, workers are using a mechanical crusher to process raw materials more efficiently.



#### BENEFITS

Converts crop residues and cow dung into high-quality compost within 30–45 days.

## ENERGY EFFICIENCY: POWERING FARMS THE SMART WAY

The SMART Project promotes the use of solar-powered irrigation systems to replace diesel and grid-based electricity. Solar irrigation provides a reliable, zero-emission energy source, significantly lowering operating costs and ensuring uninterrupted water supply during critical farming periods.



### SOLAR-POWERED IRRIGATION PUMP

#### BENEFITS

Provides a zero-emission, reliable energy source for irrigation, eliminating diesel and grid electricity expenses.

#### COST

**BDT 200,000 approx.** for 3.78 kW solar and 2 HP pump

In Jhenaidah, farmer Harun Mondal has invested BDT 200,000 in a 3.78 kW solar system for irrigation through the SMART Project's RECP initiative. He uses the technology to irrigate his own 1 bigha of flowers and 2.5 bighas of rice, while also providing water for an additional 8 bighas of his neighbors' crops. By transitioning to this sustainable model, Harun expects to recover his investment within just two years.

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