Kampot Cooling:

Innovative Technology Solution to Save Cambodia's World-Famous Pepper

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About People in Need (PIN)

- An international CSO with 30+ years of experience humanitarian, development, and human rights work
- Active in 30+countries
- Operating in Cambodia since 2008
- Key program areas in Cambodia:
  - Disaster Management
  - Green Energy Transition
  - Livelihood Development
  - Technical and Vocational Education and Training (TVET)

The Challenge

Why It Matters

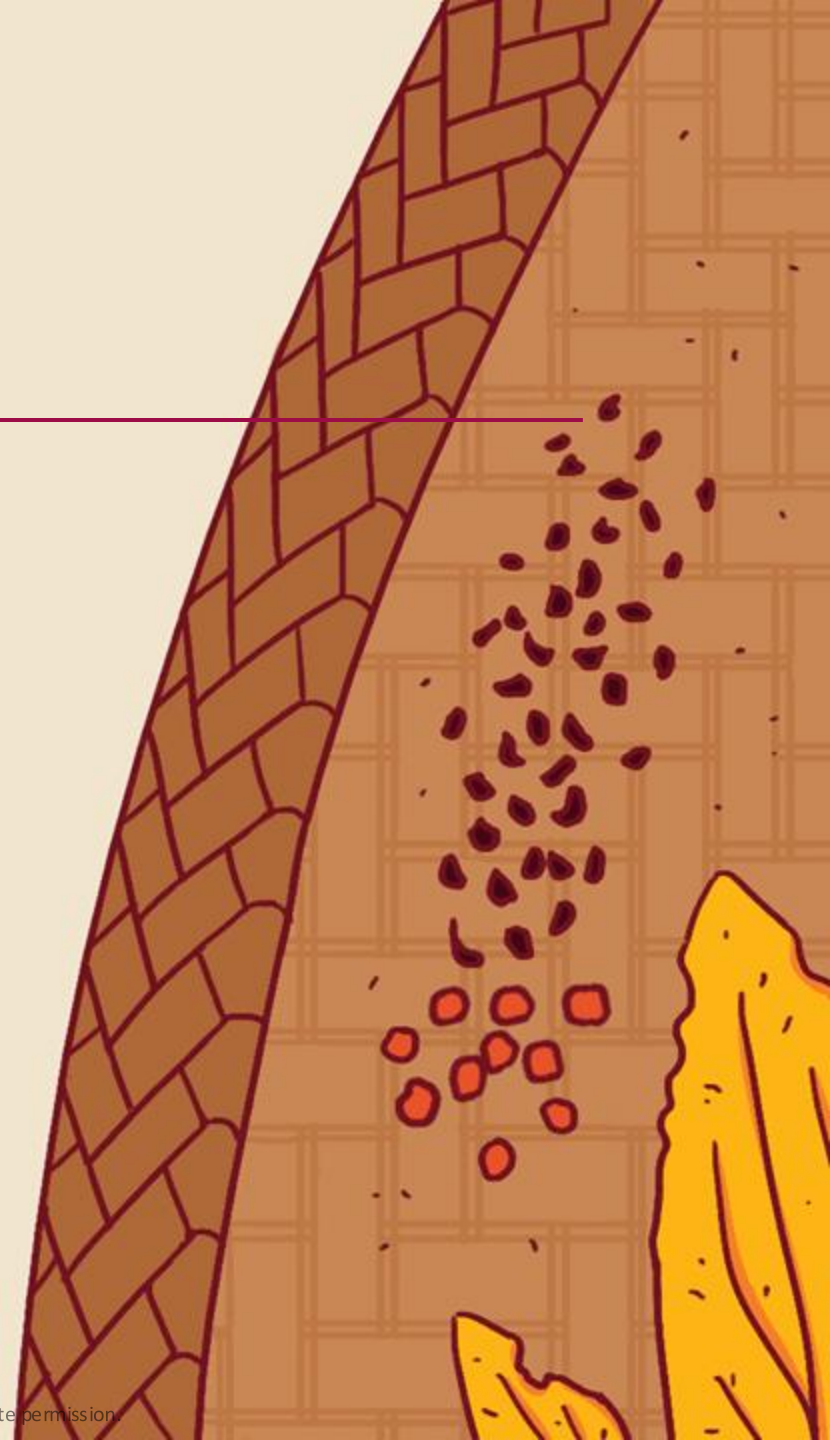
Cambodia's prized Kampot pepper is in jeopardy, with **up to 80% crop losses due to extreme heat and drought**.

Women, who are central to the pepper industry through their roles in post-harvest processing and cooperative work, face substantial economic impacts.

Traditional methods are no longer sufficient to counter the effects of record-breaking heat.

What's Needed

A practical, scalable solution that can protect crops, stabilize incomes, and empower women farmers to adapt to increasingly hotter days.



Impact of Heat on Cambodian Smallholder Farmers

Context

- Agricultural represents a significant portion of Cambodia's GDP and rural employment
- Women represent majority of the agricultural workforce
- Climate change impacts are being felt now – more intense heatwaves, unpredictable dry/wet seasons, droughts

Impacts on Agriculture

- Reduction of crop yields and plants
- Increase in intensity and frequency of droughts
- Degradation of soil and water scarcity

Impact on Women Agricultural Workers

- Heat stress reduces women's ability to work thereby jeopardizing livelihoods
- Negative impact of heat on women's health; including heat exhaustion, dehydration, and fatigue
- Less opportunity to pursue climate adaptation solutions

How Extreme Heat Threatens Cambodian Agriculture

Yield Reduction

- Prolonged extreme heat reduces crop growth, quality, and yields, and can lead to complete harvest failure.
- In 2024, Kampot pepper harvests fell by about 50%, with some farms reporting losses of up to 80–100%.

Drought Stress

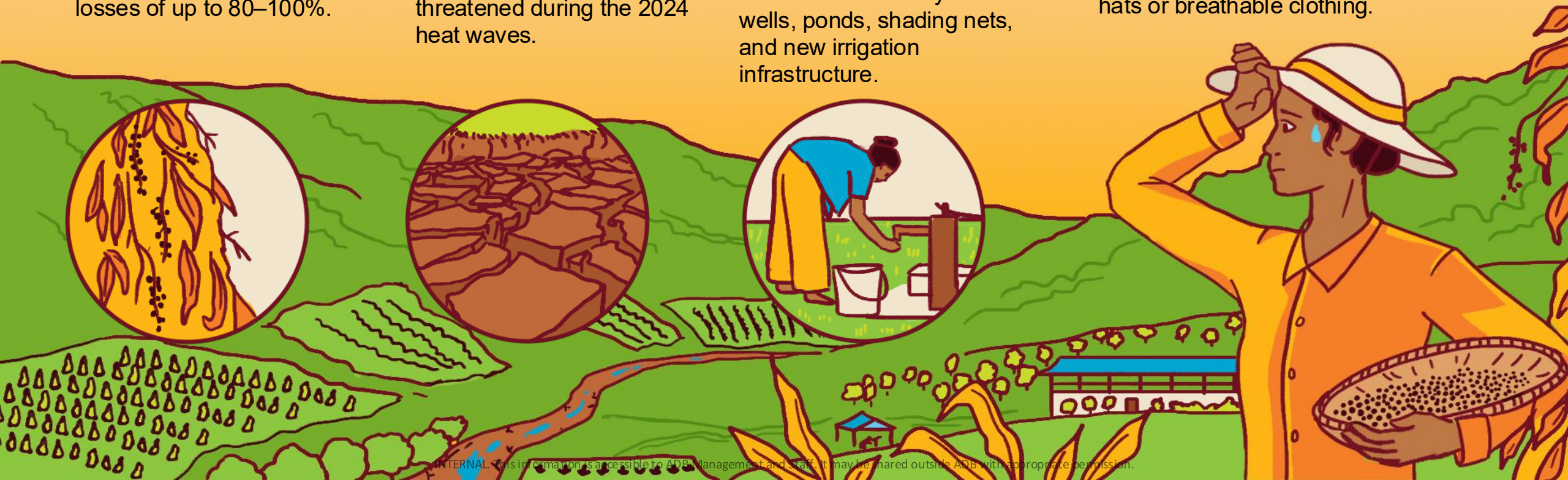
- Heat waves degrade soil quality, and when coupled with reduced rainfall, intensify water scarcity.
- Farmers without access to efficient irrigation systems saw their crops especially threatened during the 2024 heat waves.

Rising Operational Costs

- Poor soil quality, water scarcity, and crop losses increase costs for fertilizers, irrigation, and replanting.
- Kampot pepper farmers have had to invest heavily in bore wells, ponds, shading nets, and new irrigation infrastructure.

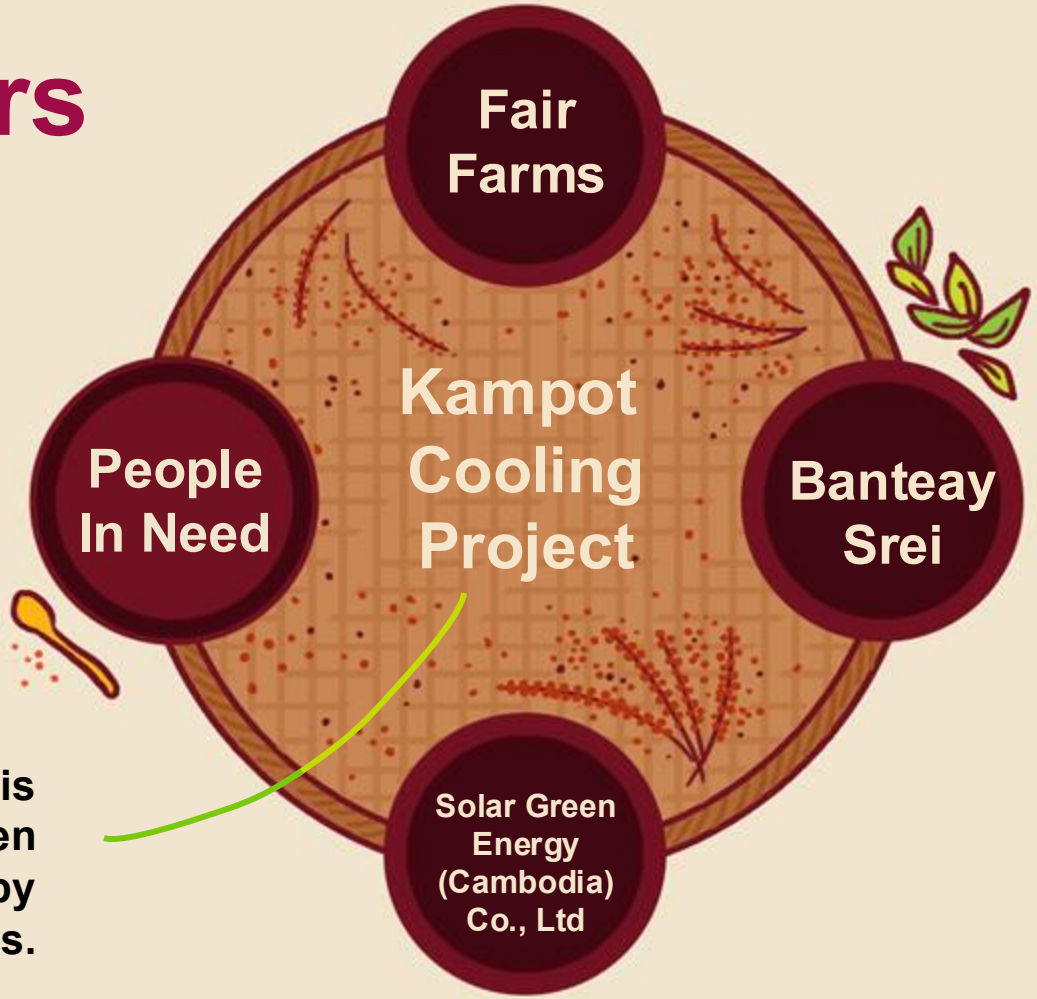
Worker Health Risks

- Agricultural workers endure long hours under extreme heat, raising risks of dehydration, heat stroke, and respiratory illness.
- Many cannot afford to stop working during heat waves and lack access to protective gear such as wide-brimmed hats or breathable clothing.



Key Partners

Organic Kampot pepper producer committed to environmental and social sustainability.



International NGO with expertise in testing innovative solutions in Cambodia's agri-fishery sector (smart agriculture, renewable energy, circular economy).

Women's NGO focused on empowering vulnerable women and advancing gender equality.

The project team is composed of 60% women experts and is supported by strong local partnerships.

Women-led solar energy company specializing in agricultural solutions.

The Innovation

A **solar-powered cooling** and irrigation system designed for Kampot pepper producers in Cambodia. The solution addresses heat stress and water scarcity, enhancing climate resilience and productivity and empowering women. The project exemplifies gender-responsive innovation tailored to local needs.

Key Focus Areas

- **Gender-Responsive Resilience**
  Strengthen climate resilience and support community-led decision-making.
- **Community Ownership**
  Build gender-mainstreaming tools that reinforce local ownership.

People in Need

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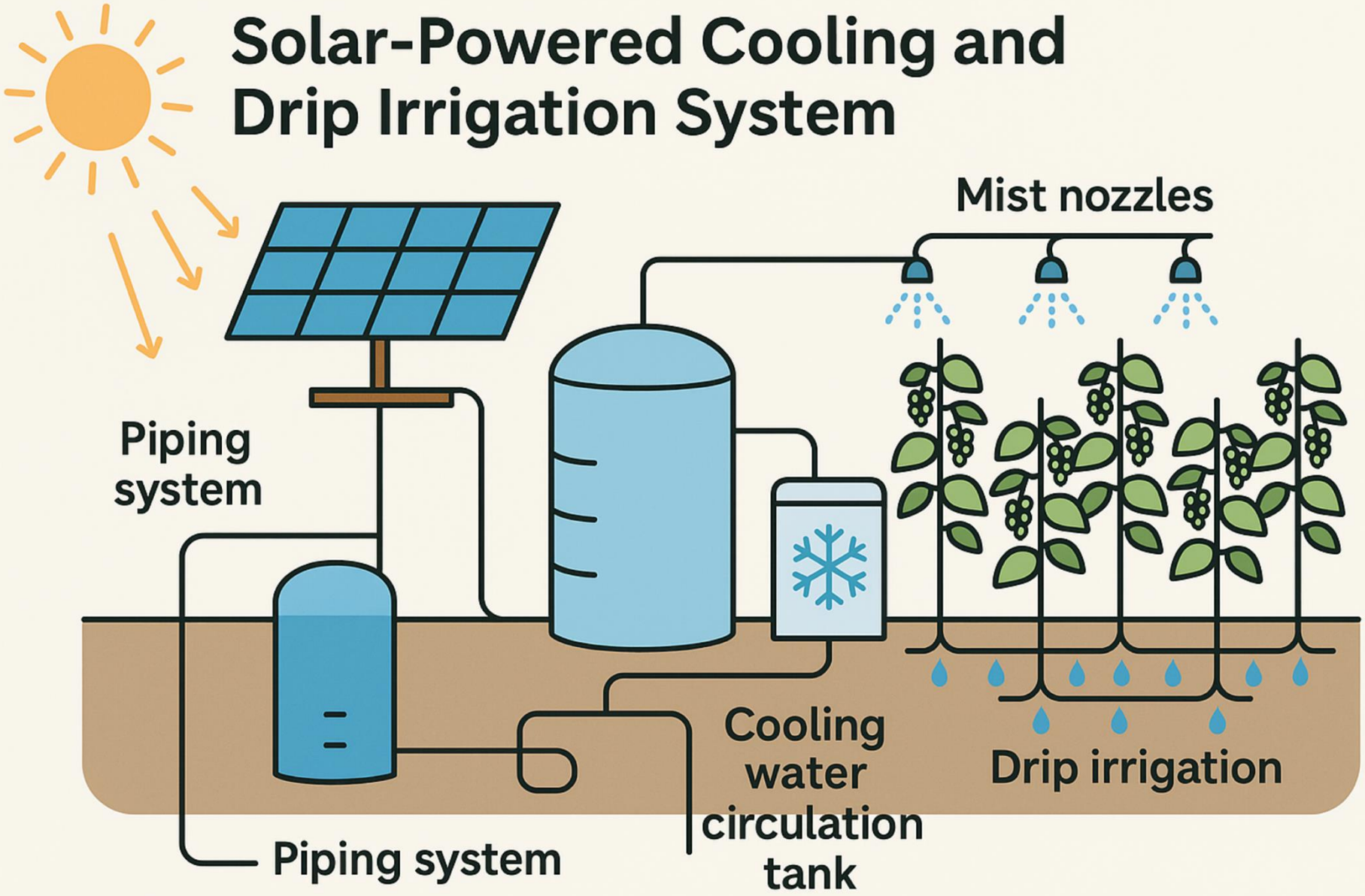
Lead	People in Need
Location	Kep and Kampot Provinces, Cambodia
Timeline	12 months (Jan – Dec 2025)

Solar-Powered Cooling and Drip Irrigation System



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