



Scan the QR code
to see the Sprayer
in action

The right amount of water, at the right time

SmartSprayer

Water is becoming increasingly scarce, making efficient irrigation essential to reduce pressure on valuable water resources. This is particularly challenging for low-pressure irrigation, such as gravity-fed systems in mountainous areas and irrigation powered by solar pumps, where conventional irrigation methods often perform poorly. Practica developed the SmartSprayer: a low-pressure pivot irrigation system designed specifically for smallholder farmers. It enables highly efficient and uniform irrigation with minimal pressure and energy requirements. An optional water meter shows the exact amount of water applied in millimetres, giving farmers greater control over their irrigation. Combined with Croptimal irrigation advice, the SmartSprayer makes precision irrigation accessible to smallholder farmers—applying the right amount of water, at the right time.

Our innovation



Land with the SmartSprayer operating

Smallholder farmers need irrigation solutions that are affordable, water-efficient and flexible. Small plastic sprinklers are widely available and inexpensive, but perform poorly at low water pressure. Drip irrigation can be highly efficient, but is often costly and less practical in fields where crops and planting layouts change frequently.

The SmartSprayer bridges this gap. Practica developed an affordable, low-pressure pivot irrigation system specifically for smallholder farmers. It irrigates a relatively large area with high uniformity and water-use efficiency, even at low pressure. This makes it particularly suitable for gravity-fed irrigation schemes in hilly areas and for systems using small solar-powered pumps.

The SmartSprayer is easy to move and adapt to different crops and field layouts. By combining low-pressure operation, high efficiency, flexibility and affordability, it helps farmers make better use of scarce water, reduce irrigation labour and increase crop yields and income.

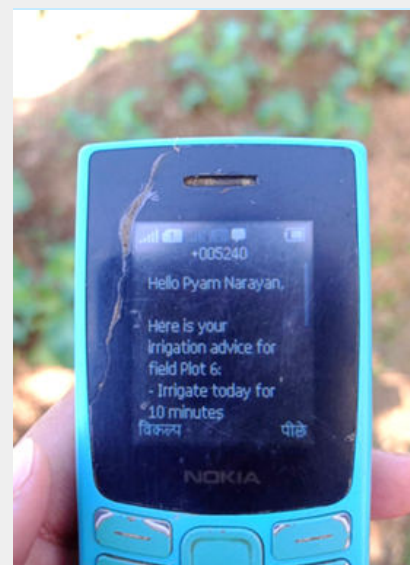
Our design

The SmartSprayer is a low-pressure irrigation system operating at less than 0.2 bar (2 m). It is available in two models, depending on customer needs and local context: a durable Premium model made from aluminium, and an Eco model made with locally available bamboo. The bamboo version can be constructed locally, making it affordable and adaptable to different field sizes and crop heights.

Designed for smallholder farmers, the SmartSprayer covers approximately 50–100 m² at a time and can easily be moved between fields. Its irrigation uniformity is approximately 70%, compared with around 30% for traditional small sprinklers under low-pressure conditions.

To improve irrigation accuracy, the SmartMonitor was developed with FutureWater as an optional add-on. It combines the Coptimal mobile app with a measuring device. Based on weather forecasts and crop conditions, Coptimal provides irrigation advice via SMS or WhatsApp. The measuring device displays the amount of water applied in millimetres, allowing farmers to stop irrigation when the recommended amount is reached.

Together, the SmartSprayer and SmartMonitor enable precision irrigation: applying the right amount of water at the right time, improving crop production while using scarce water efficiently.



Coptimal irrigation advice via SMS

Our ambition



Pilot testing during the 2025 and 2026 growing seasons in Nepal demonstrated the added value of the SmartSprayer. Compared with traditional irrigation methods, the system improved irrigation performance and increased crop yields. With a target sales price of €75 for the aluminium Premium model and €30 for the Eco bamboo model, it offers affordable options for different contexts.

Our ambition is to scale the SmartSprayer across water-scarce regions, making precision irrigation accessible to smallholder farmers. Practica supports this by exploring markets, establishing procurement channels and training farmers in assembly and operation.

We currently work with Futurepump India Pvt. Ltd. for production and distribution of SmartSprayer kits for local assembly. We are looking to expand our network of partners in other regions. Interested in bringing the SmartSprayer to your market? Please contact us.



Practica - Innovative technologies managed by local entrepreneurs

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innovations:

