



## You - That's Where It Starts

In efforts to keep up with the latest and greatest, perfectly working SmartPhones are often relegated to the fate of collecting dust on nightstands. If you donate these old SmartPhones (working or otherwise; we take dumb phones as well) to SmartPhones4Water (S4W), they will have a positive impact in the developing world!

Founded in 2013, S4W exists to leverage the power of SmartPhones to enrich lives in the developing world by improving our understanding and management of water resources.

If you donate a phone (or phones!) to S4W, depending on the quality of the donation, it will be used in one of the following three ways:

1. Usable phones are directly provided to monitoring personnel at project locations (one project is currently underway in Mozambique and another will begin in Nepal soon),
2. Usable but damaged phones are repaired and provided to monitoring personnel, and
3. Unusable phones are recycled and proceeds are used to fund water monitoring.

Usable but damaged phones will be repaired by people overseas before being used for water monitoring, creating a unique employment opportunity and supporting the local economy at project locations. In Nepal, S4W has connections to several homes in the city of Kathmandu for girls who have been rescued from brothels and abusive conditions. We plan to partner with them to repair and refurbish phones, helping to give these girls with a dark past hope for a bright future through vocational training and employment.

## S4W

*"If you can't measure it, you can't improve it"* - Lord Kelvin, Scottish Mathematician and Physicist

Just like doctors rely on vital signs to understand and improve human health, water managers rely on data to wisely steward water - our most precious resource. S4W collects accurate water data with images from SmartPhones in developing countries where it has never before been possible.

### *The Problem*

Water is the most basic necessity for human life (apart from oxygen of course). A steady, healthy food supply is next, and water is required for food production. While not an immediate necessity, energy is the life blood of the modern world. Water is vital for food production and for people, and it can be used

to create clean energy through hydropower generation. Unfortunately, in many developing countries water is desperately mismanaged, in part due to a lack of foundational hydrologic information like the flow rate and water quality of streams, or precipitation rates during storm events.

### *Our Solution*

S4W turns the classical hydrologic monitoring approach on end. Instead of relying on the expensive geographically-fixed monitoring equipment typically used in developed countries, which is susceptible to the perils of weather and vandalism, monitoring is accomplished via a tool increasingly carried in one's pocket - a SmartPhone.

Images are rich in data. S4W extracts information from images taken with SmartPhones - information like water quality, precipitation, and stream flow. SmartPhones provide the means to wirelessly transfer images to support real-time analysis. SmartPhones link images to locations and times, facilitating the development of a spatially and temporally rich data set. Building valuable hydrologic datasets will support wise stewardship of water resources, and will yield excellent opportunities for the development of consistent water supplies, reliable food supplies, healthy environments, and alternative clean energy sources.

## SmartWater - S4W Monitoring Personnel and Programs

S4W monitoring personnel, primarily locals responding to an employment offer and hired in-country, will be tasked with collecting hydrologic data at strategic locations to build the dataset to support wise stewardship of water resources. In addition to the direct benefits of employment, a SmartPhone can also provide a life-changing window into a bright world of knowledge and opportunity that would otherwise be inaccessible.

### *From the Mountains*

In the upper portions of watersheds, S4W develops a spatially rich dataset of streamflow, precipitation, lake levels, and snowpack. Real-time streamflow data can be used to support early warning systems to improve flood management.

### *Down to the Valleys*

Streams join together to form rivers, bringing life to the fertile valleys below. S4W monitors river flows, irrigation diversions, and applications to precisely allocate the right amount of water at the right time for people and for food production.

Across the length and breadth of a watershed, an S4W monitoring program can improve:

1. Understanding how our actions are affecting the water cycle
2. Identifying where, when, and how much water is available to meet demands (agricultural, urban, and environmental)
3. Preparation and planning for water shortages and drought

4. Developing early warning systems to protect people from the dangers of flooding
5. Assessing the potential for water storage and hydropower generation projects

## Moving Forward

S4W - in partnership with Mobile Water Management in the Netherlands, H2oTech in California, and many others - is currently implementing this game-changing monitoring methodology in Mozambique in Africa, and is ramping up for a monitoring project in the Himalayan region of Nepal in Asia.

In addition to individual SmartPhone donations, S4W is actively seeking corporate partnerships for SmartPhone donations, as well as applying for grants and seeking other funding sources.

Thank you for taking the time to read this. Please let us know if you have any questions (there are some big words and big concepts in here, but those are needed for big ideas!) and please consider donating a SmartPhone and telling your friends and colleagues about us.