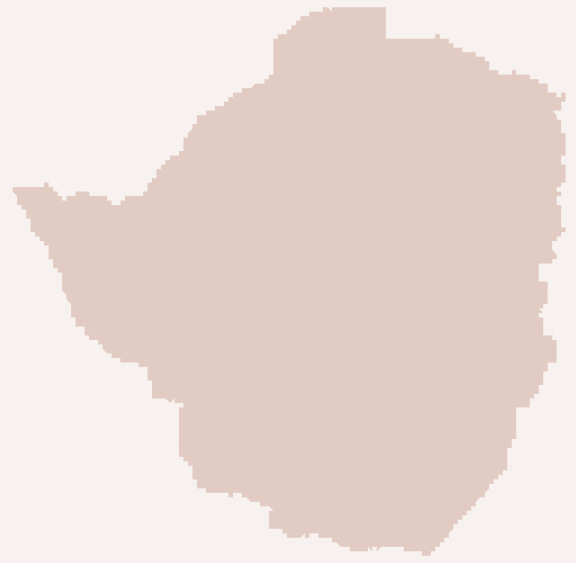


“SOLAR FOR HEALTH” IN ZIMBABWE



GUIDING PRINCIPLE 6: EQUITY, INCLUSIVENESS, AND EMPOWERMENT

Infrastructure investment must be balanced between social and economic priorities. Infrastructure should provide accessible and affordable services equitably to all, with a view to promoting social inclusion and fostering economic empowerment and social mobility, and protecting human rights. It should avoid harm to communities and users (especially those who are vulnerable or marginalized), be safe and promote human health and well-being.



BACKGROUND

Zimbabwe's social infrastructure services have historically been constrained by persistent energy shortages. Erratic weather conditions, losses of experienced staff, a lack of investment, weak legal frameworks and parastatals operating at unsustainable losses for non-cost reflective tariffs combined to lead to a widespread energy deficit (African Development Bank [AfDB] 2019). In recent years, Zimbabwe has experienced power cuts of up to 18 hours a day as drought reduced water levels for hydropower, and electricity imports were unable to fill the gap in supply (Moyo 2018).

Healthcare has been among the systems most affected by this massive power deficit. Health

clinics, maternity wards, surgery blocks, medical warehouses and laboratories all rely on electricity to refrigerate medicines, power lights, operate life-saving medical devices and manage relevant data and information. Additionally, the lack of reliable energy sources has jeopardized financial sustainability due to increased energy costs arising from the use of diesel or petrol generators when the national grid is unavailable. These challenges have resulted in a deficient healthcare system that does not ensure accessible and affordable services for all. According to a national survey in 2019, 36.1 per cent of Zimbabweans did not access treatment for their illnesses, with affordability being the number one reason for not seeking medical treatment (Zimbabwe, National Statistics Agency 2019, p. 69).

“SOLAR FOR HEALTH”

To help address these issues, in 2017, Zimbabwe began implementing the Solar for Health (S4H) Initiative with the United Nations Development Programme, and with financial support from the Global Fund to Fight AIDS, Tuberculosis and Malaria. The initiative harnesses Zimbabwe’s abundant yet previously untapped renewable energy resources for this critical form of social infrastructure (Mukeredzi 2019). The annual daily average solar radiation in Zimbabwe is 20 megajoules per square metre, which could produce 10,000 gigawatt hours of electrical energy per year (UN International Emergency Children’s Fund [UNICEF] 2015, p.9), highlighting the potential for solar energy to power infrastructure such as health facilities.

As part of UNDP’s global S4H Initiative, Zimbabwe has installed solar photovoltaic (PV) systems in over 400 health facilities, benefitting 6,525,000 individuals across the country (UNDP 2018a). These facilities now have reliable power throughout the day and patients receive the care they need, when they need it (UNDP 2020a). Before the S4H Initiative was introduced in Zimbabwe, more than two-thirds of the health clinics in Zimbabwe had access to electricity only for approximately four hours a day (UNDP 2018b, p. 12).



Source: adapted from UNDP (2018b)

FIGURE 6: INTEGRATED APPROACH OF THE S4H INITIATIVE

BALANCED PRIORITIES THROUGH AN INTEGRATED APPROACH

In connecting two vital sectors – energy and health – the initiative helps the government improve universal health coverage through developing sustainable infrastructure. It ensures that social priorities (health) are addressed in combination with Zimbabwe’s important economic and environmental aspirations. The adoption of solar power by healthcare facilities in the country is an example of developmental leapfrogging, as Zimbabwe foregoes traditional and unsustainable practices for environmentally sustainable ones. The clean, renewable energy supply improves healthcare services, while providing economic and financial benefits and reducing harmful emissions. Figure 6 depicts how the initiative interconnects health, environment, development and return on investment.

The S4H Initiative has brought fundamental positive social impacts to participating communities. It ensures reliable energy supply to critical health facilities (including pharmacies, warehouses, cold rooms and laboratories), with improved lighting and temperature control of vaccines. The improved energy supply has also provided extended hours of operation, and facilitated retention and recruitment of healthcare workers in remote settings and improvements in data management for healthcare. The 405 clinics now enjoy uninterrupted power supply, allowing, for example, healthcare workers to reduce complications during and following pregnancy and childbirth. Deliveries no longer take place by candlelight, and life-saving procedures are not denied due to power shortages (UNDP 2020).

Integrating solar and health infrastructure in Zimbabwe has brought economic and financial benefits, too. For example, solar systems have helped reduce electricity bills by up to 60 per cent for some of the beneficiary health facilities, allowing clinics to reinvest the money saved in sustaining and improving facilities and services (UNDP 2018b). Budget savings can also be reinvested, for instance, to support national priority health programmes or further develop healthcare infrastructure. Estimates show that the return on investment in the S4H Initiative is fully realized within 2-4 years (UNDP 2018b). Furthermore, participating health facilities have the potential to provide improved energy access to nearby public facilities such as schools, public offices and libraries, or offer power stations for the use of the local community to charge their personal electronic devices. Broader

benefits include the creation of green jobs and the development of local service providers and markets for solar power.

The consistent source of energy provided by solar power also ensures that health systems are climate-resilient and are able to withstand droughts and other shocks that affect the traditional power supply (UNDP 2020). In addition, solar systems have facilitated water purification, which is a key achievement in a country where water-borne diseases such as cholera are widespread (UNDP 2020).

The S4H Initiative seeks to contribute directly to the 2030 Agenda for Sustainable Development and its commitment to “leave no one behind” by reaching under-served communities. Specifically, it supports efforts to achieve SDG 3 (Good Health and Well-being), SDG 5 (Gender Equality), SDG 7 (Affordable and Clean Energy), SDG 13 (Climate action) and SDG 17 (Partnerships for the Goals) (UN 2020). By improving maternal health and also training women as solar technicians, the initiative helps advance SDG 5 (UNDP 2020). Figure 7, below, depicts SDGs influenced through the S4H initiative.



Source: UNDP (2020)

FIGURE 7: SDGS POTENTIALLY INFLUENCED THROUGH THE S4H INITIATIVE

ACCESSIBLE SERVICES

S4H in Zimbabwe is a salient example of how infrastructure investments can help address inequalities and exclusion of the most marginalized and vulnerable communities. By providing reliable access to electricity for healthcare facilities in poor, remote and rural areas, S4H has promoted human health and well-being and accelerated progress towards universal health coverage. In particular, Zimbabwe has targeted communities affected by AIDS, tuberculosis and malaria, as well as pregnant women and children under the age of five. 3,915,000 women and children have benefitted from the S4H Initiative (UNDP 2018a).

By improving access to healthcare in rural areas, the initiative is also helping reduce urban-rural inequalities. It addresses the higher maternal mortality that exists in rural areas and among more impoverished communities (UNDP 2020). The introduction of solar energy has helped to solve IT challenges brought on by regular power cuts,

which have an important bearing on the quality and accessibility of healthcare services. For instance, the provision of solar energy has enabled health facilities in Zimbabwe to collect and store data essential for managing patient files and ensuring adequate stocks of medical supplies. Moreover, integrating solar and health has improved the timeliness of transmission of health information for evidence-based decision-making, and has provided uninterrupted diagnostic services by powering laboratory equipment.

One broadly recognized limitation of the model used in S4H, however, is that it currently does not ensure adequate operations and maintenance, including safe management of waste, throughout the entire lifecycle of the solar energy system (usually spanning 10-15 years). Zimbabwe is in the process of developing a detailed maintenance plan, and conducting training in partnership with selected international companies and their local partners in order to help develop local skills and capacity for the maintenance of the systems.



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REPLICABILITY

The S4H Initiative has already been successfully replicated throughout Zimbabwe. This shows promise in terms of wider application in other S4H countries and for connecting solar and health systems more broadly. However, there remains a need to strengthen capacity among national authorities and local energy service providers, and to develop a more robust policy framework for distributed renewable energy. As a way forward, the government is processing key reforms aimed at improving the financial sector, land tenure and mortgage regimes, as well as the development of a coherent “Renewable Energy Policy” (AfDB 2019). The Ministry of Energy and Power Development has committed to achieve universal access to adequate and sustainable energy in Zimbabwe by 2030 (UNICEF 2015).

Throughout 2020, the S4H Initiative has sought to electrify an additional 642 health facilities, ensuring that nearly 70 per cent of all health facilities in Zimbabwe have sustainable and reliable access to electricity. Mobilization of private investment may be needed to scale-up S4H and ensure longer-term financial sustainability, but this is constrained by the current instability of Zimbabwe’s economy and hyperinflation (Reserve Bank of Zimbabwe 2020).

Globally, the COVID-19 crisis has highlighted the importance of reliable and affordable electricity to enable health systems to respond to rapidly increased demand generated by the outbreak, and maintain essential healthcare service delivery (World Health Organization [WHO] 2020). Targeted and integrated investments for social infrastructure, such as those in Zimbabwe, will be key to building resilience to future crises.

KEY INSIGHTS

- The S4H Initiative in Zimbabwe illustrates a balance between social and economic priorities, ensuring allocation of resources to inclusive social infrastructure.
- Solar systems provide a stable, clean and reliable energy supply, even in the most remote locations, meaning more patients can access quality health services.
- Integrating the two important sectors, solar and healthcare, results in lower power bills for health facilities. These vital budget savings can then be reinvested to support other priority health programmes.

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