

ACHIEVING FOOD SECURITY IN KENYA THROUGH SMART SOLAR IRRIGATION

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Kenya has set a goal of reaching 100% food security in the country as part of the President's Big 4 Agenda, with irrigation as a key part of the solution. 11 million people are actively employed in primary production agriculture, with the majority of these (80%) in small holder farms of less than three acres. This brief highlights the impact, potential scale of opportunity, and policy recommendations for solar irrigation technologies in Kenya. This policy brief summary was commissioned by Mercy Corps AgriFin Accelerate (AFA) and was developed by Dalberg.

CONTEXT



SOLAR WATER PUMP UPTAKE IS NASCENT BUT IS PRIMED TO PLAY A MAJOR ROLE IN AGRICULTURE IN KENYA



TO ACCELERATE UPTAKE OF SOLAR WATER PUMPS BY FARMERS, GOVERNMENT AND OTHER SUPPORT ACTORS NEED TO INVEST IN AMBITIOUS POLICY INTERVENTIONS



WITH MULTIPLE POLICY INTERVENTIONS COMBINED, IRRIGATION THROUGH SOLAR WATER PUMPS INCREASE FARMER INCOME, FOOD PRODUCTION, RESILIENCE AND REDUCE FOOD IMPORTS

WHY SOLAR WATER PUMPS?



WITH IRRIGATION, A FARMER CAN **INCREASE THEIR PRODUCTION BETWEEN 2 AND 4 TIMES**, AND THEIR INCOME BETWEEN 2 AND 6 TIMES



SOLAR WATER PUMPS **COSTS TO A FARMER ARE LESS THAN HALF THAT OF A DIESEL PUMP** OVER THEIR LIFETIME



IN ANY GIVEN YEAR IN KENYA THERE IS A 40% CHANCE OF DROUGHT - AND WITH A RELIABLE PUMP, PRODUCTION CAN CONTINUE EVEN WHEN RAINS FAIL

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INTERVENTION IMPACT: WHAT WE CAN ACHIEVE



INCREASE IRRIGATION

Under the National Water Master Plan 2030, the Government of Kenya aims to **irrigate an additional 803,000 hectares by 2030**. Under the combined policy interventions, the land irrigated is projected to exceed the targets, by reaching 1.3 million hectares.

THE LAND IRRIGATED WILL **EXCEED THE PROJECTED IRRIGATED LAND IN THE NATIONAL WATER MASTER PLAN**



REDUCE FOOD INSECURITY

The Big 4 Agenda has set a goal to reduce the number of food insecure Kenyans by 50%. Around 3.1 million Kenyans are currently food insecure. Under the combined policy interventions, **6.8 million Kenyans are likely to benefit from an increase of food production** resulting in a 44% reduction in food insecure Kenyans.

FOOD PRODUCTION WILL INCREASE 44% SUPPORTING THE AIM OF A 50% REDUCTION IN THE NUMBER OF FOOD INSECURE KENYANS



INCREASE AGRICULTURAL GDP

The Big 4 Agenda aims to increase the proportion of GDP attributed to agriculture, by 48%. If all four interventions were chosen, the increase of **food production due to solar irrigation will result in a 35% increase in the proportion of agriculture in Kenya's GDP** in 2030 (from 26% of GDP to 35% of GDP).

SOLAR IRRIGATION COULD LEAD TO A **35% INCREASE IN THE PROPORTION OF AGRICULTURE IN KENYA'S GDP**



INCREASE SHF INCOME

The Big 4 Agenda has set a goal to **increase the average daily income of farmers by 34%**. The expansion of irrigation will lead to higher yield and incentivize farmers to grow higher value crops. This will enable farmers to increase their income well above this target.

THE INCOME INCREASE WILL EXCEED THE OBJECTIVE OF **34% INCREASE OF SHF INCOME**

