

A photograph of two young children in a rural, outdoor setting. The child on the left is a boy with curly brown hair, wearing a yellow shirt, smiling broadly. The child on the right is a girl wearing a traditional orange and blue patterned headscarf, also smiling. They are standing in front of a background of green trees and a clear sky.

# Growing in the Salted Earth

Increasing yields in salinated land could save the livelihoods of millions – and help avoid a coming food crisis.

AUGUST 31, 2017

# Salt-Affected Land: A Global Problem

1 billion hectares

of land has too much salt to grow crops.

2000 hectares

becomes salt affected everyday.

250 million people

live on this soil—and even more rely on it  
for food.



# Impact In Pakistan

In Pakistan alone, 6.2 million hectares of land are affected by salt.

To make matters worse, farmers have struggled with irregular irrigation and poor drainage as well as flooding and prolonged droughts.



Low crop yields



\$27 billion worth of crops lost annually



Value of land diminishing

# A Farmer's Challenge

Hardworking farmers strive to provide for their families and farm profitably.

But salt-affected land can threaten their livelihoods.

Farmers don't have salt-tolerant crops, effective irrigations techniques combining brackish groundwater and sweet surface water, or proper drainage systems.

As their land becomes salinated, their earnings and food security suffer.

If farmers can't adapt, their land will wither, and they will be forced to abandon their homes.



# A Solution: Salt-Resistant Crops

Obtaining salt-tolerant seed varieties can help farmers increase yields and stay on their land.

They also need...



Training and expertise for growing healthy crops on salinated land.



Improved irrigation and drainage systems.



# The Consortium



MetaMeta, Salt Farm Texel, and Jaffer Brothers have unique expertise in all these areas – and formed a consortium to deliver *comprehensive assistance*.

This helps farmers to:



Grow



Irrigate



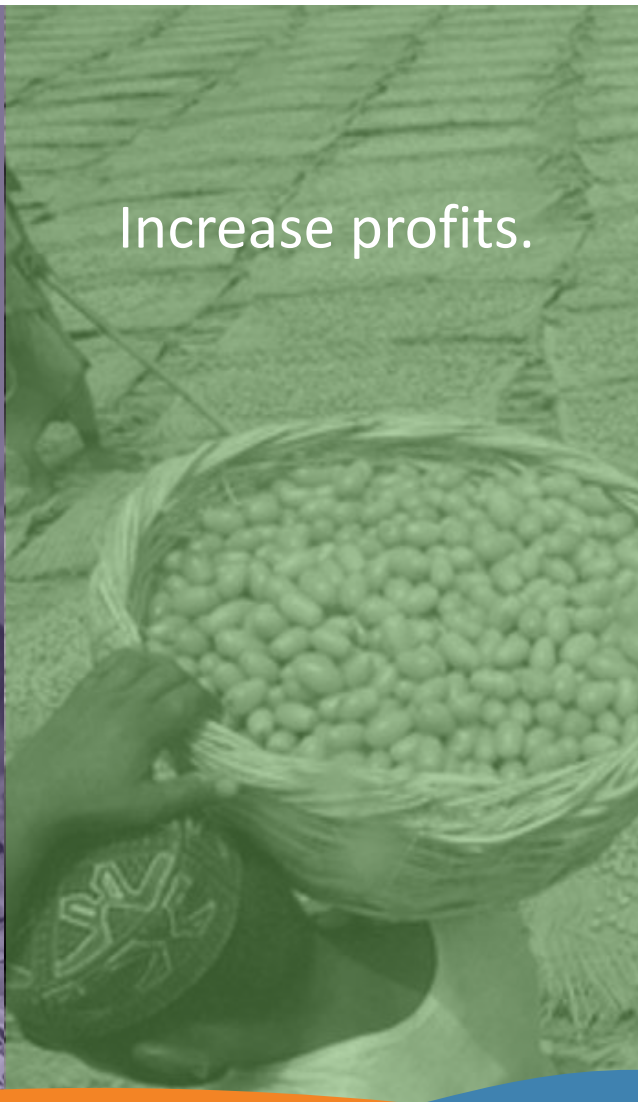
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# Farmers Are Now Able To...

Grow crops that provide food for their families.



Increase profits.



Build good lives on their own land.



# A Farmer's Story

A farmer from Sanghar, in the east of Sindh province, simply could not grow crops as salinity levels built up on his land.

Jaffer Agriservices Limited approached the farmer with salt-tolerant potato varieties. He had never grown potatoes before, but was eager to see if they could revive his barren land.

He planted several varieties.



# A Farmer's Story

During harvest season, the farmer began to see results. The seeds had produced 15 tons of potatoes per hectare on incredibly saline lands where he had never grown potatoes — and with a limited amount of water. In fact, his yield was three-quarters of the average yield of potatoes on non-saline soils (20 ton/ha).

The results surpassed his wildest expectations. He even reported the harvest of a single tuber weighing an astonishing 760 grams.

His resolution next year: Securing another batch of salt-tolerant potatoes and improving the yields even more.



# Success So Far

Farmers planted 15 hectares

of salt-tolerant potato at 15 different locations in the Punjab and Sindh provinces.

More than 2100 people

working on these lands and their families including more than 1000 women – directly benefitted from the cultivation of salt-tolerant potatoes.



# Success So Far



## Water savings

Farmers saved a total of **65 million+ litres** of water.

They adopted an effective and replicable system of **alternating and combining surface and groundwater** for irrigation.



## Yield and salinity

Farmers produced **131 metric tons** of potatoes.

**5 percent increase** in yield compared to Pakistan's national average.

Best-performing varieties **increased yield by 55 percent**.

In 4 of the 15 locations, the **potato yield doubled**.

# Solving a Worldwide Problem

By 2050, 9.1 billion people are projected to populate the earth.

Current food production needs

Needs to increase by 70% — but the world's water resources will not increase to match this demand.



# Solving a Worldwide Problem

Only 0.3% of global water  
is usable, fresh water.

We need to be 70% more  
efficient in using water for  
agriculture.



# Solving a Worldwide Problem

Growing crops on salt-affected

soil is crucial not just for the farmers who inhabit that land but for the global food supply.



# What We Need To Do

In the upcoming season,

MetaMeta, Salt Farm Texel, and Jaffer Agri Services aim to help farmers plant 100 hectares of potato in salt-affected areas.

Farmers already see the potential of these new potato varieties.

These seeds need to be rolled out sustainably, along with training and improvement in irrigation and drainage systems.



# Replicate Our Success Story



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# Become A Partner



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META  
META

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# Together We Can...

Create and lead a sustainable market for the seeds.

Transfer knowledge and expertise to the farmers.

Provide farmers opportunities to cultivate and profit from salt affected land.





Partner with us.