

A photograph of a person operating a 2-wheel tractor in a field, kicking up dust. The scene is set against a bright sky with the sun visible. A large, semi-transparent orange circle is overlaid on the center of the image, containing the main title and subtitle in white text.

Powering smallholder agriculture in Eastern and Southern Africa

How 2-wheel tractors increase farm power among smallholders



We all agree
that
sustainable
intensification
of agriculture
in Eastern and
Southern
Africa needs
our strongest
attention.



We work on increasing the efficiency of land productivity.,



we think about improving nutrients,

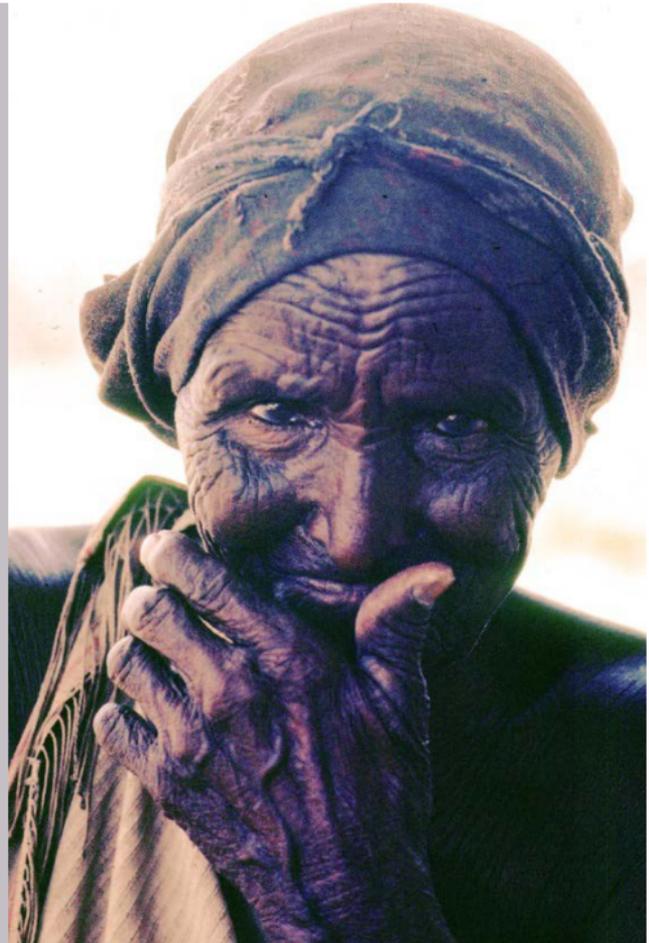


we notice the importance of water,



but we hardly work on, think about or notice the importance of farm power.

**Sustainable
intensification isn't
possible without farm
power, and farm
power is decreasing.**





The number of draught animals is getting smaller and smaller.



Life as a farmer is so hard that the younger generation has stopped farming and moved to the city.



Female farmers can't bare the drudgery any longer.

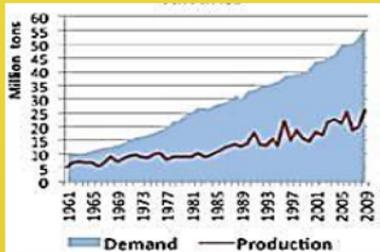


Too often, the only power farmers can use is the one that their muscles supply.

**At the same time,
the population of
Eastern and
Southern Africa is
urbanizing and
growing very
rapidly.**



The demand for food is bigger than the supply.



Gap between wheat production and consumption in Africa, 1961-2009



How can this growing and changing demand be satisfied if farm power decreases?



In order to avoid even more hunger, farm power needs our urgent attention.



Since the number of draught animals is decreasing, motorized mechanization seems to be the only way to increase farm power supply for many farmers in Eastern and Southern Africa.



Based on experiences from other regions of the world, the 2- wheel tractor seems to be the form of mechanized farm power, that is best adapted to Eastern and Southern African contexts.

2-wheel tractors



don't need
much fuel,



are
lightweight,



are easy to
maintain,



are affordable to
all.



They can be used for strip tillage and for direct planting.



They are very efficient in small and fragmented fields,



minimize soil degradation,



and form no threat to biodiversity.

For small grain, like teff, they help to produce a considerable yield and necessitate less ploughing operations.





Attempts to provide Eastern and Southern Africa with appropriate mechanization were already made 20 years ago. Unfortunately those attempts failed.



But times have changed!
And Eastern and Southern Africa seems
ready for new challenges and
opportunities



The value of agriculture has increased a lot in the past 10 to 15 years.



Intensification is a must and the demand for mechanization has never been so big.



Agricultural products are becoming more and more commercially attractive.





At the same time, mechanization is appearing in everyday life like never before: motorbikes and tuk-tuk's can be seen everywhere.

People who can repair those
small motor engines can also
repair 2-wheel tractors.



The materials to
fix them are
available



and there is no
shortage of fuel
anymore.



Now is the time to introduce the 2-wheel tractor into Eastern and Southern Africa. But what is the best way to do so?



First of all, we need to clearly identify the tasks that can benefit from mechanization.

Tillage

Harvest

Transport

Seeding

After that, we can make sure we find or manufacture the right machines for the right context.



Ideally, the machines would be made locally.



Only then, should
attention be given to
the demand,



to make farmers understand
how much their lives can
improve with a bit of help
from a machine.



**And finally,
when all of this
is done,**

**and the 2-wheel tractor can
be introduced into Eastern
and Southern Africa the way
we envision it:**

new businesses can be created.

capacities can be developed,

**and the 2-wheel tractor can
be introduced into Eastern
and Southern Africa the way
we envision it:**

As a flourishing new
business that will
help improve the life
of farmers,
manufacturers,
mechanics, and all
those involved.





But most importantly, help to ensure that there is enough food for everyone.



Australian Government
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Australian
International Food
Security Research
Centre

aciarc.gov.au/aifsc



 **CIMMYT**^{MR}
International Maize and Wheat Improvement Center

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