

How Many Farmers are Retaining Deep Bed Farming? Trends and issues.



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Smallholder farmers tend to be very conservative and are often suspicious of new and foreign farming methods. Farmers may practice externally-advised methods while project inputs and incentives are available, then revert to traditional practices once the inputs and incentives stop.

Many donor-funded projects (and others) report good adoption rates during the monitoring phases while the projects are still running, but these rates often bear little relation to the project's long-term sustainability – that is, adoption and retention rates after the projects end. Long term rates are usually low, often five percent or less.

For instance, one study¹ of Conservation Agriculture (CA), a well regarded farming technology whose techniques overlap significantly with DBF, said:

Malawi had appreciable CA uptake in the last decade. It had 70 000 ha under CA in 2014, representing 2.8% of its total arable land (Kassam et al., 2014). In the same year, South Africa was the highest on the continent with 400 000 ha, representing 2.5% of its arable land (Figure 1). National uptake of CA practice is estimated to be below 2% of Malawian smallholder farmers (Phiri et al., 2012; Dougill et al., 2017).

Preliminary data that we have prepared for Deep Bed Farming, based on 112 farmers, is encouraging in this context. In areas where Tiyeni field officers have transferred away to other areas we have seen average retention rates approaching 55 percent so far.

¹ [Smallholder farmer innovation and contexts in maize-based innovations in Conservation Agriculture Systems in Malawi](#), L. Kaluzi, C. Theirfield and Hopkins, Sustainable Agriculture Research, 2018, p87. See also *Maguza-Tembo et al* in the *Journal of Economics and Sustainable Development*, p125.

District	EPA	Section/Centre	Year started	2019/2020	2017/2018	% adopters
Nkhata Bay	Chikwina	Bula	2013	14	26	53.8
	Chikwina	Kapata	2017	17	31	54.8
	Chikwina	Kankhulukulu	2015	15	22	68.2
Mzimba North	Zombwe	Kadambo	2015	16	32	50.0
	Zombwe	Nguluwe	2016	19	42	45.2
	Zombwe	Ekaiweni 1	2014	15	28	53.6
	Zombwe	Jarantowa	2014	16	26	61.5
Average adoption						55.3

Discussion

We should stress that the above results are preliminary, and it will be necessary to conduct wider surveys of DBF adoption rates over longer periods of time to get a fuller impact.

However, we also note that our model is to keep incentives (such as pickaxes in the first year) to an absolute minimum and not to push technologies on farmers, but instead to respond to requests and invitations for training.

The rapid growth of the number of farmers adopting DBF in Malawi on this basis suggests that long term retention rates are likely to remain high, certainly by the standards of other farming technologies.

Still, it is interesting to ask why some farmers abandoned the method. Our survey results reveal these reasons:

1. **Wrong motivation** in the first place: Practicing DBF, in order to get access to extension services, mostly farm inputs.
2. **Group Challenges**
 - a. Farmers that expected to be first beneficiaries in a livestock programme but were not selected may have lost trust after the project phased out.
 - b. Those that shunned the groups and feel neglected.

- c. Farmers that did not comply to support center group pigs (feeding and cleaning) and could not receive a piglet as a penalty tend to separate from the group or abandon DBF.
3. **Competitive extension:** Some farmers are discouraged by (especially government) extension officers offering competitive methods. Their reasoning is that DBF is not (yet) an approved technology: farmers are told to plant crops using alternative technologies. However, we hope and expect that – certainly based on a recent Malawi government / [DARS assessment of DBF](#) that it will be an approved technology soon, and adoption and retention rates will consequently rise.
 4. Farmers that are getting **yield reduction on DBF** but there are **no extension staff to assist**.
 - a. Crop pests or diseases (whitegrub/nematodes);
 - b. Soils that re-compact easily
 5. Those that **did not follow gold standard** and were disappointed with its performance.

Retention rates for farmers still working with a Tiyeni field officer are higher. This table, from our 2018 baseline report, tells a different but complementary story:

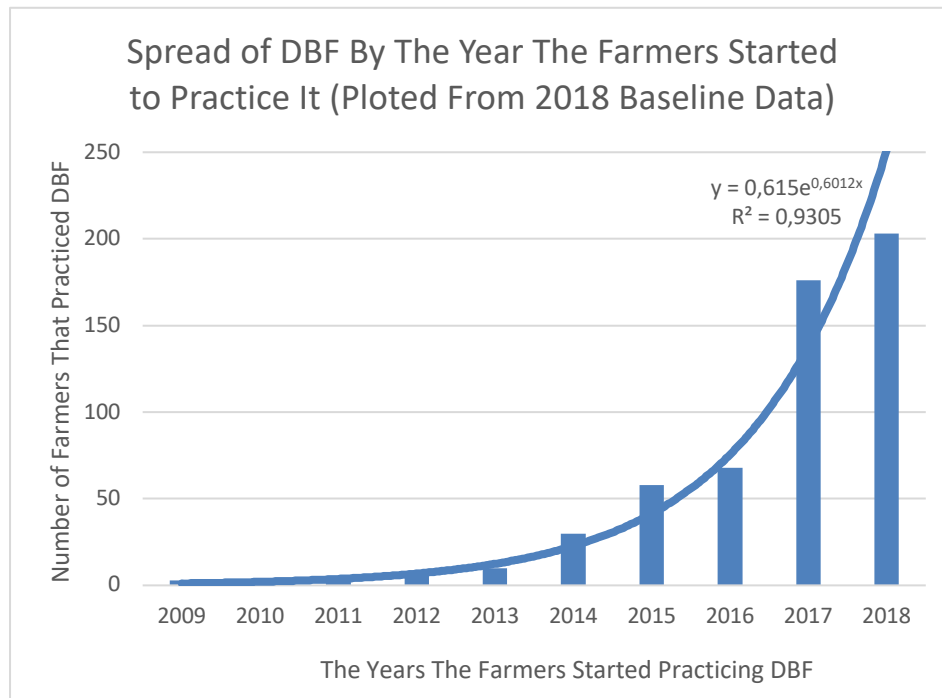
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. tabulate trend
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trend of use of DBF in terms of land	Freq.	Percent	Cum.
Decreasing	9	2.91	2.91
Increasing	199	64.40	67.31
Static	101	32.69	100.00
Total	309	100.00	

In other words, only three percent of 309 farmers surveyed during the project phases said DBF use was decreasing, while 64 percent said it was increasing, and 33 percent said it was static.

Another trend we observe is rapid adoption among farmers who have not used DBF before, based essentially on observing the performance of their neighbours' crops after DBF is adopted.

The graph below shows the trend of spread as DBF is promoted, among 560 farmers surveyed in Dowa, Mzimba, Nkhatabay and Rumphi (see our 2018 [baseline report](#), Section 6.1).



Many agricultural scientists are familiar with the low long term adoption rates of technologies that are vigorously promoted such as Conservation Agriculture, pit planting, or agroforestry, and are skeptical that such strikingly positive and results from Deep Bed Farming are sustainable in the longer term.

We believe, however, that with these methods, Malawian farmers at least have found the technology they need. DBF spreads fast because of multiple benefits that the farmers see in it, as we have outlined in detail [elsewhere](#) – and because, as one farmer put it, it is “just common sense.”

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