

## Organic Agriculture in India: Way forward

### Evidences based objective brief for policy

Organic and conventional cotton production systems might have divergent contexts, however, majority of challenges faced by both systems are similar. Lost soil fertility due to continuous monocultures, unsustainably intensive use of inputs and, lost biodiversity, health problems, labor availability and low yields often demoralize farmers' motivation. Many times these scenarios of low productivity combined with volatile cotton market lead to negative gross margins and farmers' indebtedness. Despite all these odds, farmers have limited alternative due to lacking marketing access, poor experience in other cash crops and astringing policies. Nevertheless, there are aspiring evidences that in such circumstances organic cotton production systems offer not only a way out but also a way forward. In this 'evidences based objective policy brief', we present some key evidences obtained during a decade of farming systems research in central India. Based upon these findings, we draw some policy recommendations for a brighter way forward for and with the farmers and stakeholders of cotton value chain.



### Policy brief

- Policy tools promoting adoption of organic farming are needed as it could offer suitable solution particularly for small holders with limited resources.
- Innovation platforms aimed at local capacity building and development of locally adapted technologies could serve as an important tool in reducing the yield gap in both organic as well as conventional farms.
- Financial support to small and medium holding farmers during the conversion period and incentivizing sustainable farms for ecosystem services they provide could be important policy measures towards achieving sustainability in agricultural systems.

### Evidences

- There are considerable yield gaps among different farms, both under conventional and organic management.<sup>1</sup>
- Organic farming being less capital intensive could offer a suitable solution for small holder farmers.<sup>1,2</sup>
- Productivity of soybean in organic systems can be similar to that in conventional systems, while using lower input levels, which can make organic soybean production – as part of cotton-based crop rotations – more profitable.<sup>2</sup>
- In our long-term field trial (ongoing in Madhya Pradesh since 2007), we observed a significant yield gap between organic and conventional farming systems in the 1st crop cycle (2007–2008) for cotton (–29%) and wheat (–27%), whereas in the 2nd crop cycle (2009–2010) cotton and wheat yields were similar in all farming systems due to lower yields in the conventional systems.<sup>2</sup>
- Owing to higher nutrient efficiency wheat grains from organic farms were found to contain more Zn than those from conventional ones, despite same yield levels. Organic wheat also exhibited higher nutrient efficiency for P, N and S. This on-farm study thus suggests that appropriate farm management can lead to competitive yield and improved Zn concentration in wheat grains on organic farms.<sup>3</sup>
- Our findings clearly indicate that owing to higher biological activity, organic systems possess equal capabilities of supplying P for crop growth as are conventional systems with inputs of mineral P fertilizers.<sup>4</sup>

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# FiBL

FiBL is an independent, non-profit, research institute with the aim of advancing cutting-edge science in the field of organic agriculture. FiBL's research team works together with farmers to develop innovative and cost-effective solutions to boost agricultural productivity while never losing sight of environmental, health and socio-economic impacts. Through its Department of International Cooperation, FiBL engages in development oriented agricultural research, extension and organic sector development in developing and transitional economies across globe.

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## SysCom

Since 2007, FiBL is running a Long-term Farming Systems Comparisons (SysCom) Program in the Tropics. The program is aimed at providing scientific evidence on the benefits and drawback of organic *vs.* conventional farming systems over a longer period. In this program four long term field trial sites have been established in three continents, together with local partners. Besides, Participatory On-farm Research based on the concept of '*for the farmer, by the farmer, with the farmer*' is an important component of this program. In India, SysCom field site is located in Kasrawad district of Madhya Pradesh State.

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- In an elaborate farm survey we found that organic farmers were motivated by the sustainability of cotton production and growing safer food without pesticides, whereas conventional farmers were sensitive about their reputation in community. Organic farmers with larger holdings were more concerned about closed nutrient cycles and reducing their dependence on external inputs, whereas medium and small holding organic farmers were clearly motivated by the premium price for organic cotton. Higher productivity was the only important motivation for conventional farmers with larger land holdings.<sup>1</sup>



## Policy recommendations

- Large variation among cotton yields achieved by both the organic and conventional farms highlights the tremendous scope of improvement of cotton productivity. If the underperforming farms are supported to increase their production, even to the average levels, significant increase in overall production could be achieved. In some cases, the farmers (particularly the small holders) are not even aware of the potential of increasing yields by available technologies. This is an important open area to be addressed by extension and policy institutions in collaboration with research. For instance, innovation platforms aimed at local capacity building and development of locally adapted technologies could serve as an important tool in this direction
- Incentivising the sustainable farms for ecosystem services they provide would be an important policy measure toward achieving sustainability in agricultural systems.
- Financial support to small and medium holding farmers during the conversion period from conventional to organic production system could serve as important driver of change to bring them on board.
- Simultaneous and continuous training of extension workers and farmers in sustainable farming practices is of high value and thus deserves due diligence. It is also important that the farmers are made aware of the scope of increasing yields and the potential of existing technologies. Creating the awareness about yield gap and yield variation among the farmers and encouraging them to achieve maximum attainable yield by using the examples of high yielding farms could be a useful approach.
- Efforts need to be directed at improving the timely availability of quality on-farm inputs for organic production such as seeds and pest control measures. Moreover, research efforts need to be intensified to make available locally developed technologies and improved organic practices for nutrition, plant protection as well as agronomic management.
- Providing suitable marketing opportunities by developing value chains for organic produce other than cash crops (organic cotton in this case) will also be important to maintain the motivation and commitment of organic farmers as well as will provide level economic ground.

## References

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