



World Food Programme

SAVING LIVES
CHANGING LIVES

Small mills, big opportunity:

Engaging small producers in Pakistan to fortify wheat for the hardest to reach

Adding vitamins and minerals to commonly eaten foods through fortification is generally done via large-scale production systems. But in Pakistan, most people, including the poorest and most at risk of malnutrition, buy their wheat flour from one of the country's 70,000 small-scale mills, or *chakkis*, which produce around 0.5 to 2 metric tonnes per day and sell directly to local households.

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“Much of Pakistan’s wheat flour is produced and consumed in a traditional system, with mills handed down through generations”, explains Rabia Zeeshan, Food Technologist with the World Food Programme (WFP) Pakistan country office. “The same goes for customers: People buy their everyday wheat flour from local *chakkis*, as their parents and grandparents did before them. It’s a system based on trust between all parties.”

In 2018, in collaboration with the National Fortification Alliance, the WFP Pakistan country office carried out a fortification feasibility study which revealed that 70 percent of people in Pakistan bought their wholegrain wheat flour from local *chakkis*. Wheat is a main staple in Pakistan, with Pakistanis consuming 104 kilograms of wheat and wheat products per person per year compared to 20 kilograms of rice (FAOSTAT 2019)¹.

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“Studies from other countries have suggested that fortification is difficult to do when millers are small scale, scattered and not well organized,” said Zeeshan. “But we realized that unless we worked with small *chakkis*, the majority of people in Pakistan would miss out on the benefits of fortification.”

¹ FAOSTAT Food Balances <https://www.fao.org/faostat/en/#data/FBS>

Pakistan struggles with a dire malnutrition situation. More than half of children under 5 are deficient in vitamin A, 40 percent are deficient in zinc and vitamin D, and nearly 62 per cent are anaemic². According to WFP's Fill the Nutrient Gap analysis conducted in 2017, two-thirds (66 percent) of Pakistanis would be unable to afford even the cheapest nutrient adequate diet³. In a context of micronutrient deficiencies and poor diets, fortification of commonly eaten staples with vitamins and minerals is one of the strategies a country can employ to address micronutrient malnutrition and is a cost-effective solution to improve nutrition on a large scale without requiring significant behaviour change.

Sowing seeds of success

WFP launched a pilot supporting ten small-scale chakki mills to fortify their wholemeal flour with four vitamins and minerals: iron, zinc, folic acid and vitamin B₁₂.

With a good understanding of the wheat production landscape provided by the feasibility study, in November 2020 the country office launched a pilot supporting ten small-scale chakki mills to fortify their wholemeal flour with four vitamins and minerals: iron, zinc, folic acid and vitamin B₁₂.

The pilot included activities such as training chakki owners and workers on fortification, compliance and monitoring; provision of equipment such as customized microfeeders and kits to test micronutrient levels of wheat; support for registration with government bodies; creation of a quality assurance and quality control system; and promotional activities through public awareness campaigns.

With this support, chakkis began to mill and fortify grain on-site and sell the resulting fortified flour to businesses and on the local market. Households that brought their own wheat to be milled at chakkis were also offered the option to have the wheat flour fortified for a small additional charge⁴, which most households took up.

WFP also established links between chakkis and local kilns and restaurants, encouraging these businesses to use fortified flour to make their traditional chapatis and promote fortification to their customers, explaining that chapatis were made from flour with added vitamins and minerals which were commonly missing in Pakistani diets. This in turn helped increase demand for the chakki-produced fortified flour.

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“What was unique about this project compared to other fortification projects was that as WFP we were not

buying and distributing the flour ourselves, but rather leveraging an existing system,” explained Mahamadou Tanimoune, Policy Programme officer in the Pakistan country office. “Chakkis were already selling wheat flour and people were already consuming it. We just made the product more nutritious.”

The benefit of this approach is in its sustainability, says Tanimoune. “Once millers have gained the capacity to fortify, links with businesses have been established and consumers are convinced, the project will continue even if WFP phased out support completely.”

Behaviour change for consumers is also easier, he explains. “Other programmes require more significant behaviour change, such as when we ask people to consume things they do not usually eat. Here we are just enhancing foods that people are consuming anyway. This means that the messaging is easier and adherence is more likely.”

A business case for social good

Before launching the pilot, the country office had no guarantee that the activity would be lucrative for chakkis, therefore could not approach chakkis with promises of profit. Instead, staff took an alternative approach, carefully selecting a small number of chakkis who were motivated to take part in the project to help their communities.

The country office carried out a survey among over 150 chakki owners in two municipalities (Islamabad and Rawalpindi) to scope for owners who would be willing to participate in the pilot for altruistic purposes without any guarantee of personal gain. Ten responded positively and were invited to participate in the pilot.

“Our business case was social good,” described Zeeshan. “We explained to chakki owners that although there was potential for the activity to be lucrative in the future, the purpose of the pilot was to test solutions to address the huge problem of micronutrient malnutrition that exists in their communities. Although WFP was not buying their product, we explained the support we would provide, and this was good enough for them.”

“These producers had never been given any opportunity to participate in programmes for social good, and it gave them a tangible way to help their communities through the activity they were already doing.”

Although private sector activities must make money, the country office banked on profit not being the sole motivator. “These producers had never been given any opportunity to participate in programmes for social good, and all fortification programmes so far have engaged with large-scale mills,” explained Zeeshan.

² UNICEF Pakistan <https://www.unicef.org/pakistan/nutrition-0>

³ Fill the Nutrient Gap Pakistan (WFP 2017) https://docs.wfp.org/api/documents/WFP-0000040001/download/?_ga=2.50163942.1318162790.1660746425-1626806449.1608030577

⁴ Around 10-20 Pakistani rupees or 0.04 to 0.09 USD per kilogram of wheat.

“This was the first time they had been invited to participate in a project and it gave them a tangible way to help their communities through the activity they were already doing. Unfortunately, a lot of businesses and organizations see collaboration with development agencies as an opportunity to access funds, but these producers engaged with us with the interest of helping their communities. They have good hearts.”

Exceeding expectations

Serendipitously, the participating chakkis did in fact end up growing their business, gaining local kilns and restaurants as new customers in addition to their existing clientele.

Serendipitously, the participating chakkis did in fact end up growing their business, gaining local kilns and restaurants as new customers in addition to their existing clientele. Sales of chakki-produced flour increased by between 25 percent to 65 percent through these new opportunities. Some chakkis were also able to add a small margin to the price (10-20 Pakistani rupees per kilogram of packed flour) which was indecipherable from normal grain price fluctuations, and others were able to start selling to online retailers and large-scale distribution companies. “Before this pilot, this would not have been possible,” says Zeeshan. “It is changing their way of doing business.”

The project had expanded to include 50 chakkis and was reaching 2.2 million people with fortified flour.

In just over a year, by the end of 2021, the ten participating chakkis were fortifying 85 percent of their flour⁵ and by August 2022 the project had expanded to include 50 chakkis and was reaching 2.2 million people with fortified flour. In addition to this are the families

who are bringing their own wheat flour for milling and fortifying. “The pilot vastly exceeded our expectations,” said Zeeshan. “We are reaching families who would have never got the chance to access these nutrients through their current diets.”

“With very little investment, fortification can make a huge impact on diets, health and social assistance.”

The experience also speaks to the cost effectiveness of fortification. “We are reaching over 2 million beneficiaries through 50 chakkis with an entire investment of less than \$USD 500,000, which includes all operational costs and staff salaries,” explained Tanimoune. Chakki owners were not required to invest in equipment but were encouraged to promote fortified flour to their customers. “To reach a similar number of beneficiaries in another programme our budget would be ten times higher. With very little investment, fortification can make a huge impact on diets, health and social assistance. As we say to our donors and government counterparts, this is an investment, not an expenditure.”

The next steps will be to scale up further in a second phase of piloting then begin scale up nationally, with the government fully in the driver’s seat, but the project so far has demonstrated that the approach is feasible.

“Before this project, there was no fortification of the flour that almost three quarters of Pakistanis were consuming,” says Tanimoune. “At the beginning people didn’t take us seriously. They recognized that micronutrient deficiencies were a problem and that fortification was an effective response, but they didn’t see chakkis as part of the solution. But this work requires passion, patience and perseverance. The proof that we showed them changed their minds.”



⁵ Average production capacity is 1.8-2 MT per day per chakki



Acknowledgements

Interviews were conducted with Mahamadou Tanimoune, Policy Programme Officer; and Rabia Zeeshan, Food Technologist in the Pakistan country office.

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