

Photo Credit: Wahid Adnan/Drik and Shamminaz Polen/Katalyst

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Crop Protection in the Vegetable Sector

a mini case study

— Implemented by



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Crop Protection in the Vegetable Sector

Vegetables play an important role in the overall economic development of Bangladesh. In 2010, the sector contributed approximately USD 718 million to the gross domestic product. Farmers focus on vegetable farming as this can be more profitable than cultivating traditional crops such as rice and wheat. Currently, more than four million farmers, including one million female farmers, are involved in the country's vegetable sector. However, vegetables remain highly susceptible to pest attacks. Due to a lack of knowledge, Bangladeshi farmers use pesticides in inappropriate ways to manage pest attacks. This practice deteriorates soil fertility, yield and human health.

Since 2003, Katalyst has been assisting vegetable market actors with better services and products for poor vegetable farmers. A private sector pioneer that successfully joined Katalyst in promoting appropriate crop protection techniques for 15 months was Syngenta. Katalyst then enhanced intervention activities with other input suppliers in order to facilitate wider change in the vegetable market system. In 2009, Katalyst decided to scale up efforts with the Bangladesh Crop Protec-

tion Association (BCPA) that represents over 250 private pesticide-supplying companies in the country. In 2014-2016, Katalyst and BCPA extended their work by training farmers, women, retailers and pesticide spray men on the safe and judicious use of pesticides (SUP). This initiative improved the ability of farmers to select the right types of pesticide, and to use them appropriately with the correct dosage. From 2010 to 2016, 135,000 farmers directly benefited from the information on using pesticides appropriately.

The Project

The Agri-business for Trade Competitiveness Project, branded as Katalyst, is one of the largest market development initiatives in Bangladesh. Working together with various market actors, the project generates new income opportunities for small and poor farmers across the country.

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Addressing the challenges

Chemical pesticides are commonly used in Bangladesh to protect vegetables from pest attacks. A research study in 2006 found that around 47% of Bangladeshi farmers overuse pesticides without being aware of it. This increases their cost of production which is the primary constraint Katalyst wanted to address.

The practice also adversely affects soil fertility and poses a serious threat for the environment. Washed away pesticides contaminate nearby water bodies and lead to long-term soil contamination, reduced plant life, unhygienic vegetable products, environmental hazards and human health problems.

The overuse of pesticides makes harmful insects and pests resistant to chemical pesticides. This may cause pest outbreaks that affect the overall productivity of vegetables. Moreover, farmers and spray men

face health hazards such as breathing problems, nausea, headaches etc. Hence, appropriate pesticide selection and use is an important prerequisite not only for obtaining higher productivity but also for health protection.

In order to address the mentioned challenges, Katalyst has been promoting appropriate crop protection techniques with various input companies since 2003. At a later stage, Katalyst decided to scale up the outreach of previous efforts with BCPA.



Bringing about change

In 2010, during phase 2, Katalyst started to scale up the outreach of previous efforts with BCPA, a member of Crop Life Asia. BCPA has its own pool of trainers, training materials, a widespread network and strong organisational capacity to reach more farmers, retailers and sprayer men in the country than any individual private company could reach alone. Katalyst envisaged that SUP messages dis-

What is inclusive business?

Inclusive business is an approach that offers opportunities and benefits to people living in poverty by ensuring increased growth and access to information, inputs and market linkages. Katalyst aims at promoting and facilitating the adoption of inclusive business among its stakeholders so that poor men and women in rural areas will benefit from the impacts achieved. Katalyst envisions that the knowledge and experience of private sector-led inclusive development can be promoted and practiced by its stakeholders.





Farmer's Voice

"Before the training, I would mix the pesticide powder in the machine but now I do it in separate bowls to avoid contact with poisonous chemicals. I now clean hands after using pesticides. Before the training, I often felt weak and had some breathing problems. But now all that is gone. And my production cost went down since I started to mix pesticides using both macro-fertilizer and micro-nutrients as well as compost."

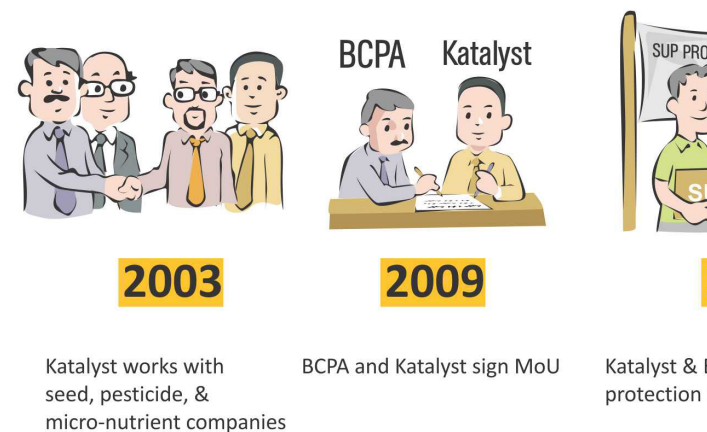
Mr. Asadul Islam (35), a farmer who participated in a BCPA training

tributed through BCPA marketing capacities can effectively reach farmers and input companies and can create meaningful behaviour change across the market system.

A strong focus was put on capacity development of BCPA's field staff who conducted trainings for retailers and farmers as well as other field activities. Video documentaries on SUP for relevant actors were the basis for a large-scale awareness campaign. Farmers and retailers received proper information on how to handle and apply pesticide judiciously and how to reduce health and environmental hazards from improper pesticide use. They also learned about appropriate dosage and application of pesticides that could reduce the cost of production. Special attention was given to retailers, who are farmers' primary source of information regarding pesticides. By the end of the intervention in phase 2, a total of 45,000 farmers have directly benefitted from the intervention.

Since 2014, Katalyst and BCPA scaled up the intervention further. New activities such as SUP demonstrations were incorporated so that farmers learned how to apply pesticides in the field. As women who are often responsible for pesticide handling at the household level, more than

900 of them were trained separately. As a result, they shared SUP information with family members and neighbors. Impact assessments show that company field staff, retailers, spray men and farmers have been educated on SUP.



In addition, Katalyst and BCPA started cooperating with the Bangladesh Institute of Management (BIM). In the process of this intervention, stakeholders realized that efficient SUP message delivery is fostered through the collaboration with government agencies and through capacity development of human resources

development of human resources in the vegetable sector. To this effect, BIM in cooperation with BCPA launched a basic training for crop protection professionals in order to develop the knowhow and skills of existing and future staff in the sector.



2010

ist & BCPA promote crop
ction techniques



2014

Katalyst & BCPA
conduct training on
safe use of pesticides



2016

BCPA & BIM develop
manual for crop
protection professionals

Evidence of impact

As a result of the holistic approach adopted by Katalyst and BCPA, significant behaviour change in the use of pesticides was observed among value chain actors. For instance, BCPA has strengthened its organisational capacity, updated the knowledge base of its training staff and became more innovative through introducing new training activities to disseminate SUP-related information to farmers. The association started to train retailers on a separate platform, enabling them to be more professional in sharing information on pesticide use. BCPA has also

included specific training modules for women. For the first time, BCPA in cooperation with BIM developed a course for human resource development in the vegetable sector.

The intervention has had an impact on retailers as the latter's knowhow on SUP increased. Retailers started sharing SUP information with farmers after they had been trained.





This way, they have gained farmers' loyalty and increased their own customer base. Previously, retailers told farmers mostly about pesticide dosage but after the trainings they started to focus on SUP as well. Trained retailers who actively disseminated SUP information experienced a considerable increase in their sales.

Farmers started to apply the newly gained knowledge shared during trainings. Safety precautions presented in training and the use of protective gear have essentially improved farmers' health. Previously, they experienced skin irritation, eye burning, breathing problem, vomiting, nausea, headache, and fainting during pesticide use. Such incidents have become less as trained farmers are able to identify and manage crop disease and apply an optimum dosage of pesticides. Applying training knowhow, farmers have experienced a production increase of 9.7 kg per decimal while their income grew up to BDT 3,000 per crop yield. Within a period of 2010-2016 around 135,000 farmers have benefited from safe and judicious pesticide use.

The way forward

SUP promotional activities proved its effectiveness in enhancing farmers' productivity and health. Observing positive results across the value chain, BCPA is taking up an active role in scaling up the intervention on its own and looking for new partners. The association intends to pursue smaller companies to incorporate the activities in their operations. BCPA has started changing its plan of activities for upcoming seasons. The association has already spent BDT 1.6 million for developing additional promotional materials. In addition, BCPA is planning to extend capacity development activities for retailers and farmers covering new areas and including more female household members.

BCPA is also taking up internal measures to improve its organizational structure. For instance, BCPA is orienting staff of its member organizations on SUP for these organizations to include proper pesticide use in-

structions in their products, and promote safety measures through their networks. Moreover, the association retained the employment of a training manager on their own payroll at the end of the project's second phase so that the coordination of BCPA's SUP activities could be continued in the subsequent phase with Katalyst.

Promoting safe and judicious pesticide use has contributed to BCPA's goodwill at various levels. In particular, their acceptability has increased at the grassroots level and with government bodies. This also has helped the association to maintain loyalty among its members and their customers. Promoting SUP as an embedded service can be beneficial for private companies as it establishes loyalty among customers which can have a positive impact on profits made. Moreover, the training and promotional materials developed under the collaboration between Katalyst and BCPA can be accessed by all BCPA member companies. This

can be a tangible source for them to disseminate information which they can internalize. Private companies other than BCPA member companies and development projects can also access this information with the consent from BCPA.

