INTERNAL EVALUATION

How can children in cocoa-growing communities be protected effectively against exposure to pesticides?

Evaluation of training programmes piloted in Côte d'Ivoire and Ghana

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International COCOA Initiative

Contents

Background and context

In recent years, the use of pesticides has become an essential element of cocoa farmers' strategies to protect their crop against pests and disease. However, bad use of pesticides poses significant risks to human health, particularly that of children, who are more vulnerable to their toxic effects than adults.

In cocoa-growing communities in West Africa, children are exposed to pesticides not only when they help their parents on farms, but also in their everyday home environment, especially when playing outside. Even small doses of pesticides can be harmful to children's health. Exposure can occur through vapours from pesticides stored within homes or on newly treated fields. Toxic particles can stay in the air for several days after spraying or can be found as residue in empty packaging or on protective equipment. Toxic substances can also pass from mothers to their unborn or breastfed babies. Protecting children from exposure to pesticides is therefore not only the responsibility of those who spray pesticides, but of all members of cocoa-growing communities.

To guide actors in the sector on how to better protect children against risks from pesticides, ICI, with support from The Hershey's Company, has gathered expertise and evidence from the field to identify suitable interventions. Survey research and stakeholder consultations conducted in Ghana and Côte d'Ivoire during the first phase of this programme yielded the following insights:

1. Existing training programmes on safe use of pesticides, offered through agricultural extension services or farmer certification programmes, for example, **mostly reach farmers within organised supply chains** and focus on agronomical knowledge around pesticides. Other members of cocoa-growing households and communities have much less access to knowledge and awareness raising on pesticides.
2. Even when farmers and spraying service providers acquire a decent level of knowledge on product risks and necessary safety measures, they **often fail to translate knowledge into practice** and do not take sufficient precautions to protect their health and the health of others.
3. A major gap in the content covered by existing training programmes is the vulnerability of children, and the risks posed to **children in utero and during breastfeeding** when mothers are exposed.
4. While many farming families avoid engaging their children in spraying pesticides, children in cocoa-growing households are often **exposed to pesticides outside the farm**, in their everyday home environment, where the products are stored and prepared for use, and when they help with tasks before and after spraying.

Activities developed by ICI to address the challenge

To respond to these challenges, ICI has developed a **behaviour change training targeted at community groups with high representation of women**, such as Village Savings and Loans Associations (VSLA).[1] The training focuses on children's vulnerability to pesticide exposure and enables participants to better protect children from exposure to pesticides in their everyday environment. The training method is based on social behaviour change concepts and guides participants in a process of identifying the most imminent risks of children's exposure in the local context, prioritising measures to better protect them, and setting group objectives for adopting these measures. For more details on this training, find a manual and all related materials on the ICI Knowledge Hub: Behaviour change training on how cocoa-growing households can better protect children from exposure to pesticides | ICI Cocoa Initiative.

[1] The training was developed in close collaboration with Participatory Development Associates - (PDA), a Ghana-based NGO with specific expertise in setting up VSLA and engaging them as an entry point for various community development objectives.

Other tools developed by ICI as part of the pesticides workstream are:

- A training on safe handling and application of pesticides, targeted at members of local spraying service providers, such as Community Service Groups, to help them fully understand the risks pesticides pose to human health and enable them to apply all necessary safety measures to protect children from exposure before, during and after spraying. For more details on this training, find a manual and all related materials on the ICI Knowledge Hub: Training for spraying service providers on protecting children from pesticides | ICI Cocoa Initiative
- Two short awareness-raising films that provide practical advice to all members of cocoa-growing communities on how to better protect children from the harmful effects of pesticides. These films can be used by community organisations, cooperatives, social workers, CLMRS agents or any other relevant actor as part of their awareness-raising or training activities. Find these films and accompanying materials here: Awareness films: Protecting children from pesticides | ICI Cocoa Initiative

Pilot-testing of the activities

To test the effectiveness of these activities to better protect children against pesticides, they were field-tested in 5 cocoa communities in the regions of Tonkpi and Cavally of Côte d'Ivoire in November and December 2024, with a total of 250 participants, and in 10 cocoa communities in the Central Region of Ghana in January 2025, with a total of 320 participants. In these communities, the behaviour change training was piloted with the local VSLA groups, and the training for spraying service providers was piloted in Côte d'Ivoire only with the local Community Service Groups. Both the VSLA and the Community Service Groups had been set up previously by local partner organisations under a company sustainability programme.

For the pilot testing of the training programmes, technical agents of ICI and local partners participated in a Training of Trainers facilitated by PDA and ICI specialists to acquire the relevant subject matter knowledge on pesticide-related risks and to learn how to facilitate the training with the community groups. The trainings were then piloted with community groups over three sessions of approximately 2-4 hours each, facilitated by technical agents of ICI and the local partner organisations, and supervised by PDA and ICI specialists.

For the first piloting of the training in Côte d'Ivoire, only VSLA members participated in the training. Based on this first experience and upon recommendation from PDA, when the training was tested in Ghana, VSLA members were also asked to invite their partners to the training sessions.

The behaviour change training for VSLA is divided into two phases: a first phase, which aims to build participants' understanding of pesticide-related risks and identify priority actions to better protect children; and a second phase, held at least two weeks later, to reflect on progress and discuss remaining barriers to put recommended measures into practice.

Objectives of the evaluation

The field-testing was accompanied by a mixed-method evaluation, which aimed to

1. Assess whether the training programme led to improvements in participants' knowledge, attitudes and practices in relation to children's protection against pesticides
2. Capture whether positive effects from the intervention spread beyond the training participants to other community members, and whether it could trigger a shift in risk awareness and safety practices amongst a critical mass of community members
3. To gather feedback, ideas and suggestions from relevant stakeholder groups on how the interventions could potentially be extended for deeper and longer-term impacts.

This report presents the quantitative and qualitative results of the evaluation and provides recommendations on how activities to help protect children against exposure to pesticides can be scaled and mainstreamed in sustainability programmes in the cocoa sector.

Method and sample

For a **quantitative** assessment of the impact of the training, a Knowledge, Attitudes and Practices (KAP) survey was administered to participants before and after the training courses to participants. The survey was designed to assess participants' progress in understanding the health risks posed by pesticides, their awareness of children's vulnerability, and measures taken to prevent exposure. KAP survey data were collected from

- 124 members of 10 local VSLA who had participated in the behaviour change trainings in **Côte d'Ivoire**. Of these,
  - 73% were women
  - the average age was 41 years
  - 48% had not completed primary school
  - 56% were farmers themselves, and 36% engaged in cocoa farming
  - 96% had at least one child living in their household, with an average of four children per household.
- 101 members of 10 local VSLA who had participated in the behaviour change trainings in **Ghana**. Of these,
  - 68% were women
  - the average age was 43 years
  - 14% had dropped out of school at primary level, and only 17% had continued schooling up to senior high school
  - 77% were involved in cocoa farming
  - 92% had at least one child, with an average of 4 children per household.

In addition, qualitative data were collected to answer the following research questions:

- How did participants perceive the training, the methods and their potential effects in the longer term?
- How did the facilitators perceive the training method?
- How did the technical agents involved in the piloting perceive the overall approach, including the VSLA training and the training for spraying service providers?
- How did teachers and local health workers evaluate the overall approach, and what were their recommendations looking forward?

To assess these questions, **focus group discussions** were held in all pilot communities in Côte d'Ivoire and Ghana with VSLA training participants and other community members, including children. Key informant interviews were held with technical agents of ICI and the local partner organisations involved in the facilitation of the training, with PDA agents, with community leaders, local school teachers, and health personnel of the local primary health services. All qualitative data were collected and analysed by ICI Monitoring and Evaluation teams.

Quantitative findings

How did the training impact VSLA members' knowledge, attitudes and practices regarding pesticide risks for children?

Did the training result in improved knowledge of health risks for children when exposed to pesticides?

Overall, the results show a **significant improvement in participants' knowledge** of various aspects of pesticide risks. In Côte d'Ivoire, the share of participants who were aware that any person present around spraying is subject to health risks increased from 72% to 94%, and the misconception that people need to keep distance only under windy weather conditions went down by 10 percentage points. Similarly, the proportion of participants in Ghana who understood that spraying involves risks for anyone in the vicinity increased from 73.2% to 87.8%, while those who believed that spraying pesticides is only risky when it is windy decreased from 47.6% at baseline to 18.3% at endline.

Across both countries, the training strengthened practical understanding of the role of **Personal Protective Equipment (PPE),** but the pattern of learning differed:

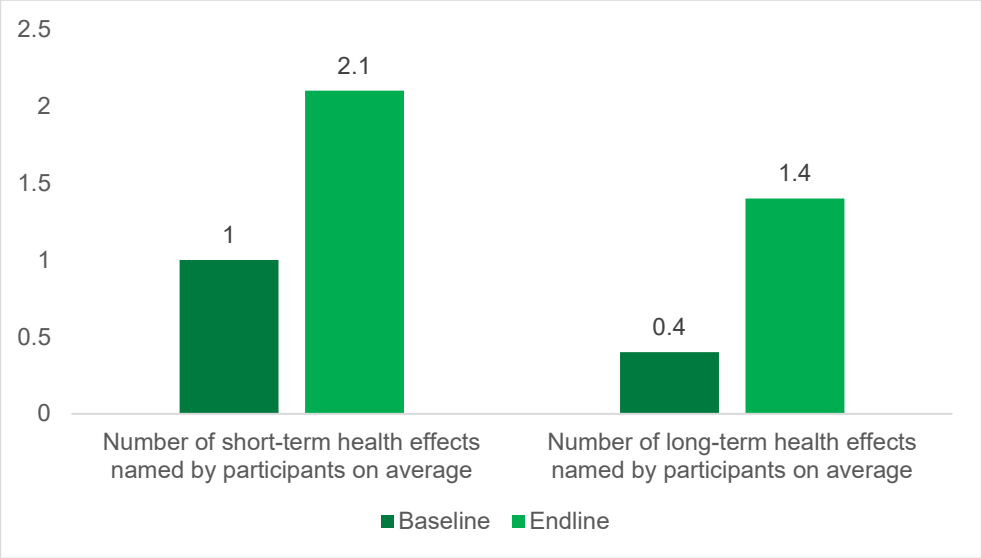
- In Côte d'Ivoire, participants tended to overestimate the level of protection provided by PPE. The share of respondents who agreed that confirmed that pesticide spraying poses a health hazard even when wearing PPE decreased from 32% to 8%.
- In Ghana, the share of respondents who believed spraying is only dangerous for others when it is windy decreased by 29.3 percentage points (about a 61.6% reduction). Also, the share recognising that anyone in the vicinity is at risk whenever pesticides are sprayed increased by 14.6 percentage points (about a 19.9% increase).

Both findings point to the need for continued emphasis on the limitations of protection provided by PPE and the importance of combining its use with safe spraying practices and strict distancing during application.

Further, participants gained **knowledge on the short-term and long-term health effects** of children's exposure to pesticides.

- Participants in Côte d'Ivoire were able to list significantly more examples of immediate symptoms of exposure and of long-term health conditions after the training. The increase in knowledge on long-term health effects was particularly strong: the number of examples people named tripled through the training. However, overall, participants still showed a better understanding of short-term symptoms than of long-term effects (see Figure 1a). Clearly, immediate symptoms are much easier to relate to situations of exposure, which is why trainers must pay special attention and use effective examples and illustrations to explain long-term risks.

Figure 1a: Number of short- and long-term health effects of children's exposure to pesticides named by participants, before (baseline) and after (endline) the training (Côte d'Ivoire).



- In Ghana, the proportion of participants reporting no awareness of harmful effects declined: From 10% to 4% for ignorance of any short-term effects and from 15% to 7% for complete ignorance of long-term effects. Participants also listed a wider range of harmful effects, with the average number of immediate effects mentioned increasing slightly from 2.1 at baseline to 2.3 at endline, and the average number of long-term effects mentioned increasing from 1.5 to 1.7.

Figure 2b: Percentage of Respondents Reporting No Awareness of Pesticide Health Effects, before (baseline) and after (endline) the training (Ghana).

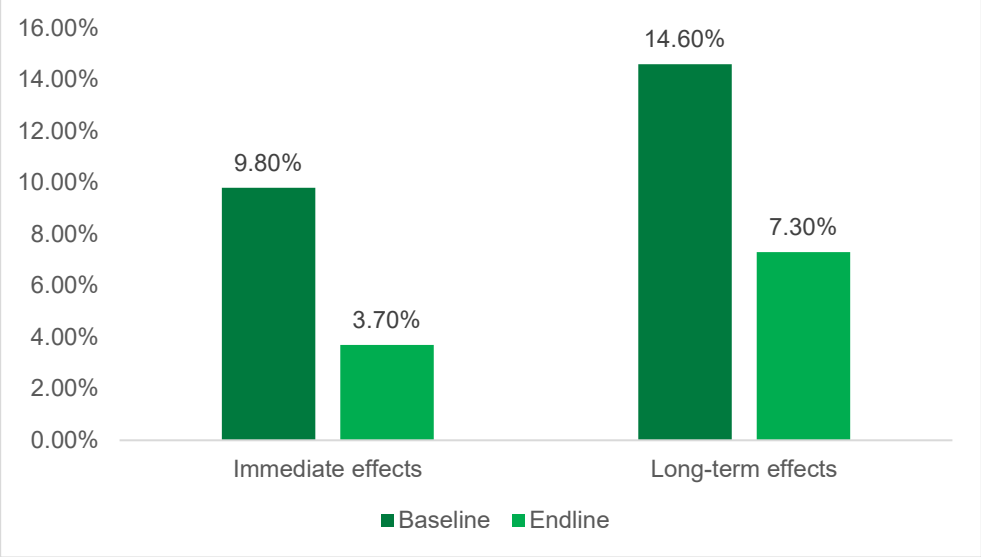
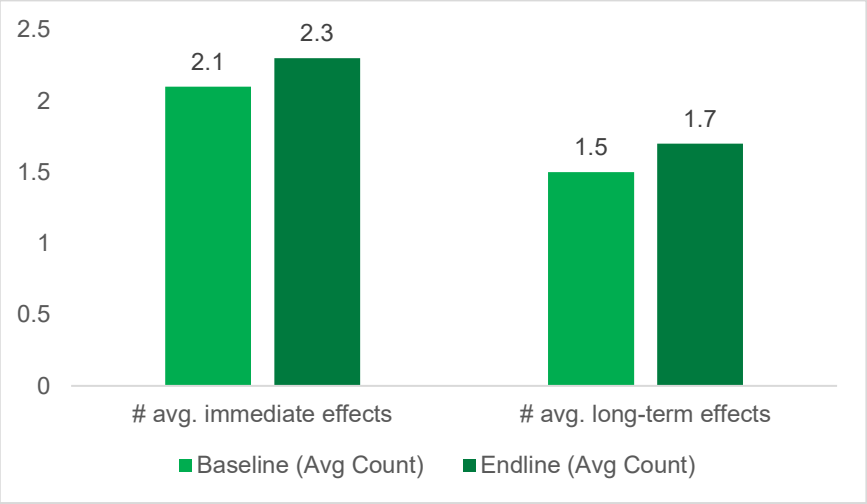


Figure 3c: Average Number of Immediate and Long-term Health Effects Mentioned, before (baseline) and after (endline) the training (Ghana).



Overall, in both countries, we see that participants showed a **better understanding of short-term symptoms than of long-term effects**. Clearly, immediate symptoms are much easier to relate to situations of exposure, which is why trainers must pay special attention and use effective examples and illustrations to explain long-term risks.

In both countries, participants showed a much more profound understanding of the different **channels through which pesticides can enter the human body** (see Figure 2a for Côte d'Ivoire and Figure 2b for Ghana). In both countries, awareness of risk through inhalation was already quite high at baseline. However, the training filled significant knowledge gaps on risks through skin contact and eye contact; and in Ghana, on risk through ingestion.

Participants also gained awareness of the different vectors of pesticide residues to which children may be exposed, such as water, food, airborne particulates, and settled dust (Figure 3).

Figure4a: Share of participants who named different channels through which pesticides can enter human bodies, before (baseline) and after the training (endline) (Côte d'Ivoire).

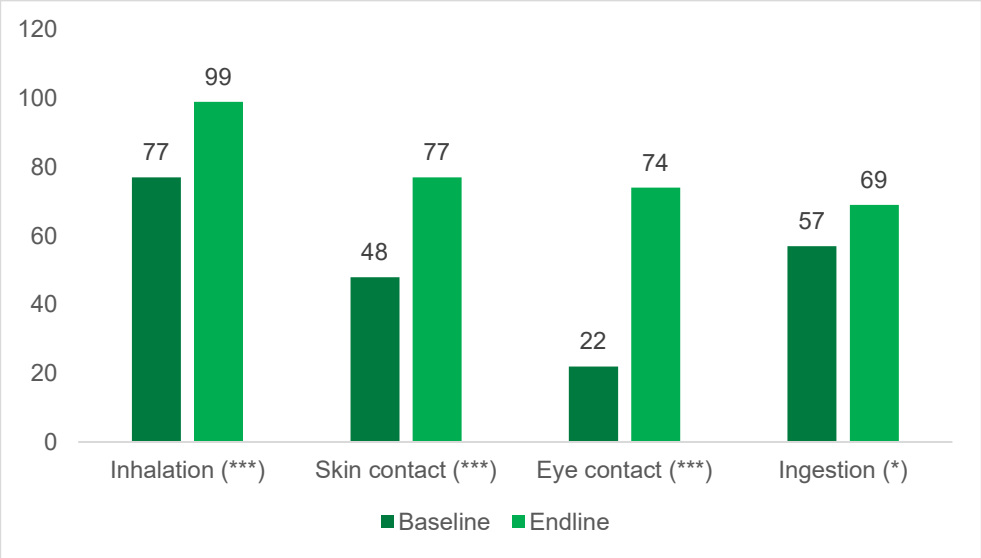


Figure 5b: Share of participants who named different channels through which pesticides can enter human bodies, before (baseline) and after the training (endline) (Ghana).

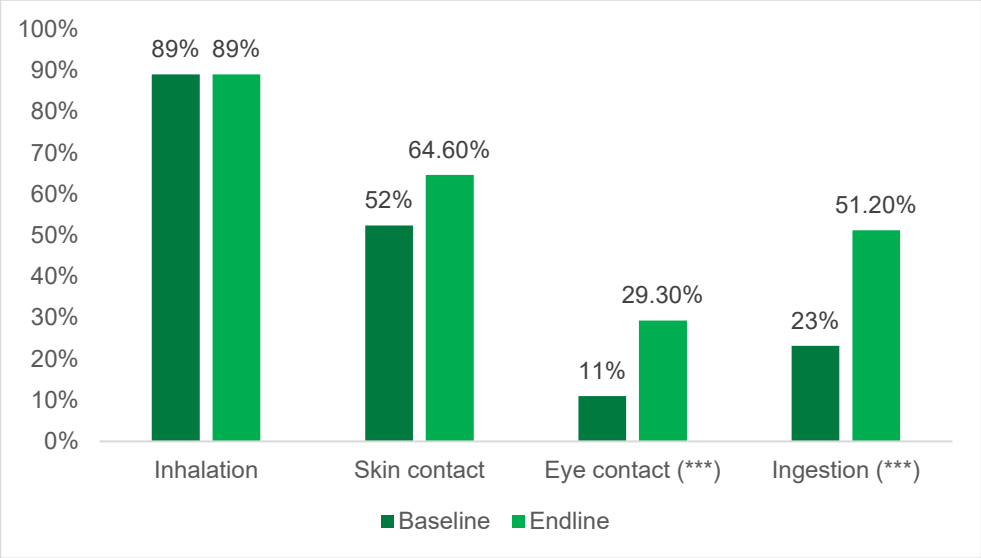
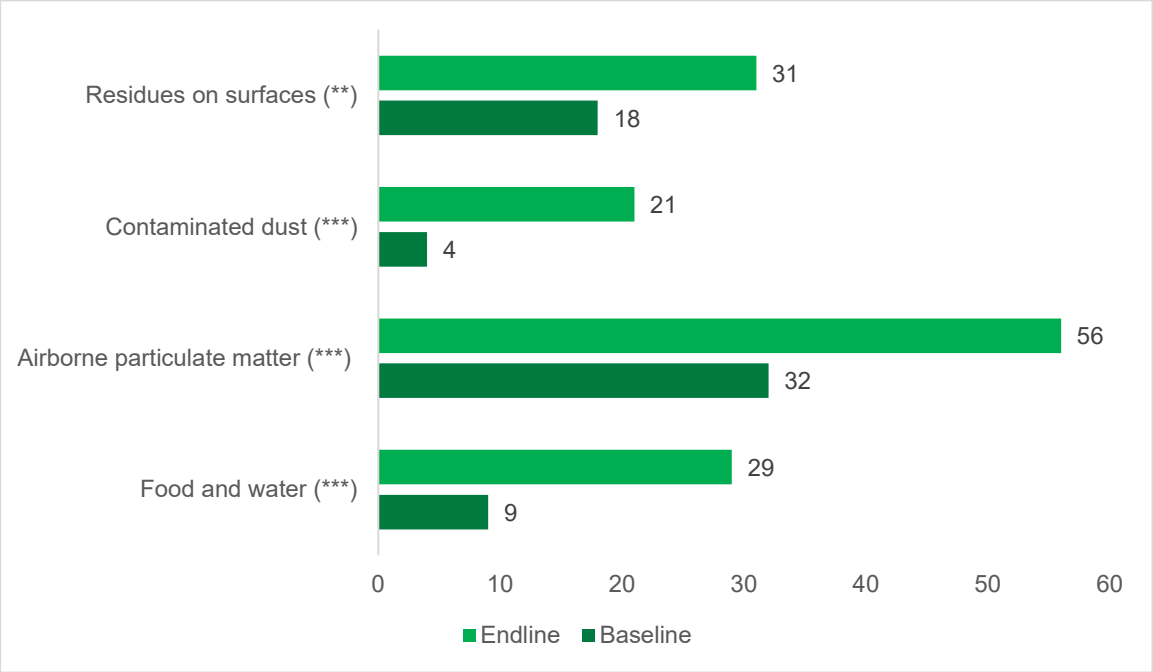


Figure 6 : Share of participants who named different potential vectors of pesticide residues in children's environment, before (baseline) and after the training (endline) (Côte d'Ivoire).



One training module focused on health risks for **unborn children and the need to protect pregnant women** from exposure.

- In Côte d'Ivoire, participants' awareness of this subject increased significantly. After the training, all of the participants had a basic awareness that pesticides pose a risk to unborn babies, and they were significantly better capable of describing that transmission channel.
- In Ghana, awareness that pesticide use is unsafe during pregnancy, and understanding of risks to unborn children were already at a very high level amongst VSLA members at baseline and fluctuated very little after the training. Knowledge on transmission of toxicity through breastfeeding improved more clearly, from 83% of participants being aware of this risk at baseline to 96% at endline.

Participants also learned to correctly **interpret hazard pictograms** as they can be found on pesticide bottles, such as "flammable", "corrosive", "highly toxic", and "serious health hazard".

- The share of participants in Cote D'Ivoire who did not know the meaning of any of the most common pictograms decreased from 50% before the training to only 2% after the training.
- In Ghana, the proportion of respondents who did not recognise any symbol declined sharply from 43% at baseline to 9% at endline.

As part of the KAP survey, participants were asked for a **self-assessment of their knowledge** on pesticide-related health risks:

- In Côte d'Ivoire, more than two-thirds of participants rated their knowledge as "weak" before the training, whereas after the training, almost 90% of participants reckoned that they had attained a modest (54%) or advanced (34%) level of knowledge.

- In Ghana, the share of participants who rated their knowledge as weak decreased from 38% to 26%. The proportion who considered their knowledge average decreased from 49% to 24%, while the share who rated their knowledge as high increased markedly from 13% to 50%.

Did the training result in more responsible attitudes towards children's exposure to pesticides?

The KAP survey asked questions about what participants considered appropriate practices in terms of handling pesticides on the farm and at home.

In both Côte d'Ivoire and Ghana, the baseline survey identified careless attitudes with regard to children's exposure to pesticides in only a few families, but the training was effective at addressing parents' remaining negligence.

- In Côte d'Ivoire, after the training, 100% of participants stated that children should never apply pesticides, and that they should also not handle pesticide packages even when they are closed. A small share of respondents (8%), however, still disagreed with the statement that pesticides should never be in the hands of children.
- In Ghana, 93% of participants at both baseline and endline stated that pesticides should never be in the hands of children. The share of participants who disagreed that children can help prepare pesticides increased from 80% to 90%, and full disagreement with allowing children to touch closed pesticide packages rose from 66% to 84%.

In Côte d'Ivoire, respondents were asked some additional questions on how to react in situations where a child was at risk of acute poisoning. The results showed increased shares of respondents who proposed correct actions to take when they saw a child playing with a pesticide container (see figure xx for details), and when a child had suffered skin contact with pesticides (see figure xx).

Figure 7: Share of respondents who proposed correct actions to take when children play with pesticide containers, before (baseline) and after (endline) the training (Côte d'Ivoire).

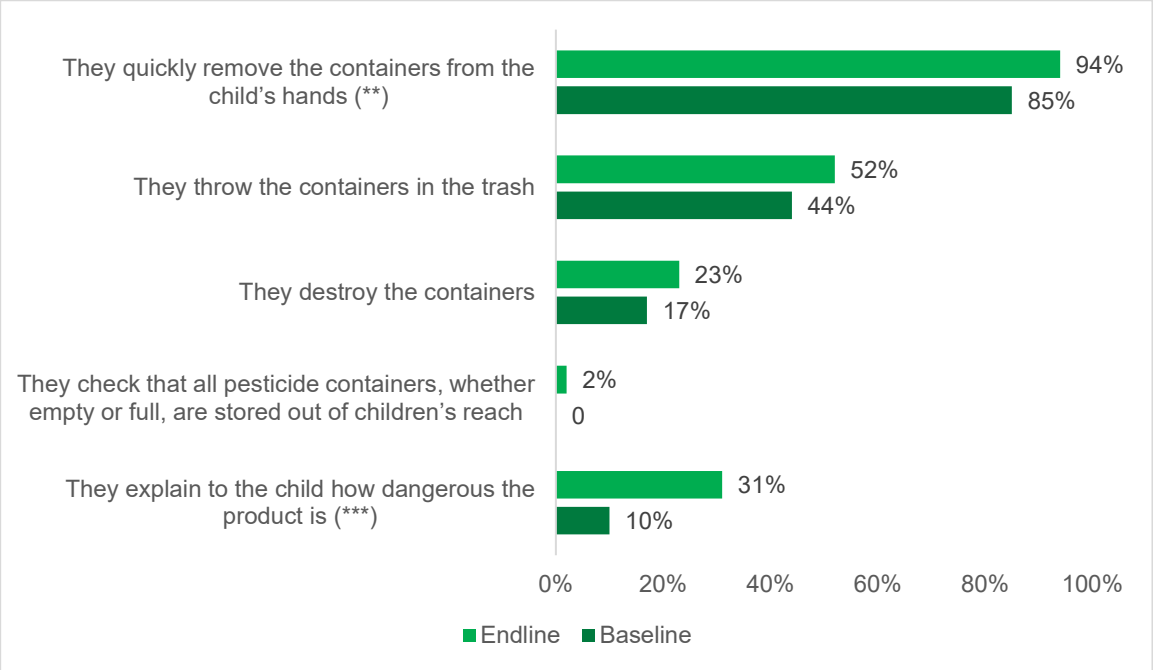
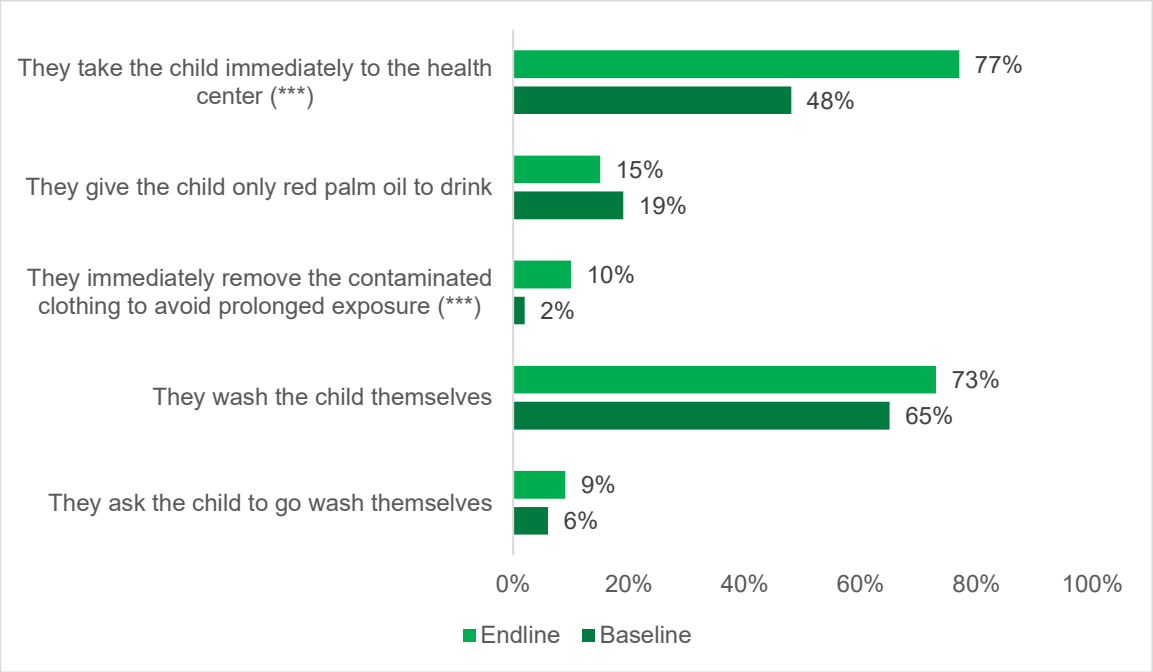


Figure 8: Share of respondents who proposed correct actions to take in case of skin contact, before (baseline) and after (endline) the training (Côte d'Ivoire).



In both countries, the training sensitised people on the need to **store pesticides safely**. Almost all participants in Côte d'Ivoire stated that pesticides should not be stored within the home, and in Ghana, almost all participants rejected the idea of storing pesticides where children play or sleep.

The training increased participants' self-confidence and their self-perception as responsible adults: In Côte d'Ivoire, after the training, 73% of participants considered themselves highly responsible when it came to protecting their children from pesticides, compared to only 15% before the training. This result is very encouraging. However, as there are still some gaps to be closed in terms of responsible attitudes, we conclude that a longer-term accompaniment will be necessary to ensure that participants make a continued effort to fully adopt the good practices identified during the training.

Did the training result in changes in practices?

The survey results indicate that due to the training, participants adopted safer and more responsible practices in terms of handling and applying pesticides.

- The share of respondents in Cote D'Ivoire who have started storing pesticides in a dedicated storage place outside the house increased from 20 % before the training to 30% after. Also, the training led participants to fully abandon the highly dangerous practice of storing pesticides in their kitchens or in their living or sleeping spaces.
- In Ghana, unsafe indoor storage of pesticides was virtually eliminated after the training, even though most families already followed recommended practices before. Storing pesticides in kitchens was not reported by any participant before or after the training, and storage in living or sleeping areas or in bathrooms dropped from 2% to 0%. After the training, an increased share of participants used alternative storage solutions outside the house, even if these were improvised, not always fully satisfying: Many said they left them in the field, often under a tree, in a locked box, or simply hidden somewhere on the farm. Others used separate areas around the house, such as an outdoor locker or a locked room.

The training also convinced families to adopt different practices for the disposal of empty pesticide containers. However, the results also suggest that parallel efforts are needed for establishing safe collection points and channels for empty containers to leave the community.

- In Côte d'Ivoire, the practice of leaving empty containers in open nature or in household rubbish bins decreased by half (from 31% before to 15 % after the training), and the practice of burning empty containers fell from 18% to 5%. Instead, 20% of respondents took up the good practice of using dedicated waste bins for pesticide container disposal.
- In Ghana, the share of respondents who burned empty pesticide containers dropped from 18% at baseline to 5% at endline, and the proportion who left containers in open areas or household rubbish declined from 31% to 15%.

The training also led participants to adopt better measures to prevent children's exposure to sprayed fields, and to recognise the importance of visible warnings to prevent accidental entry.

- In Côte d'Ivoire, the training led families to extend no-entry periods into sprayed fields for children (figure 6a). Further, the share of respondents who mark fields after spraying increased from 26% before the training to 68% after the training.
- In Ghana, the proportion of farmers who ensured that children respected a no-entry period of at least 24 hours after spraying increased from 50% to 61%. The share of parents who adopted the practice of marking fields after spraying rose substantially from 11% to 34%, while the share of those who take no measures to prevent children from entering sprayed fields fell from 28% to 13% (Figure 6b).

Figure 9a: Share of respondents who respect a recommended no-entry period to farms after spraying for children, before (baseline) and after the training (endline) (Côte d'Ivoire).

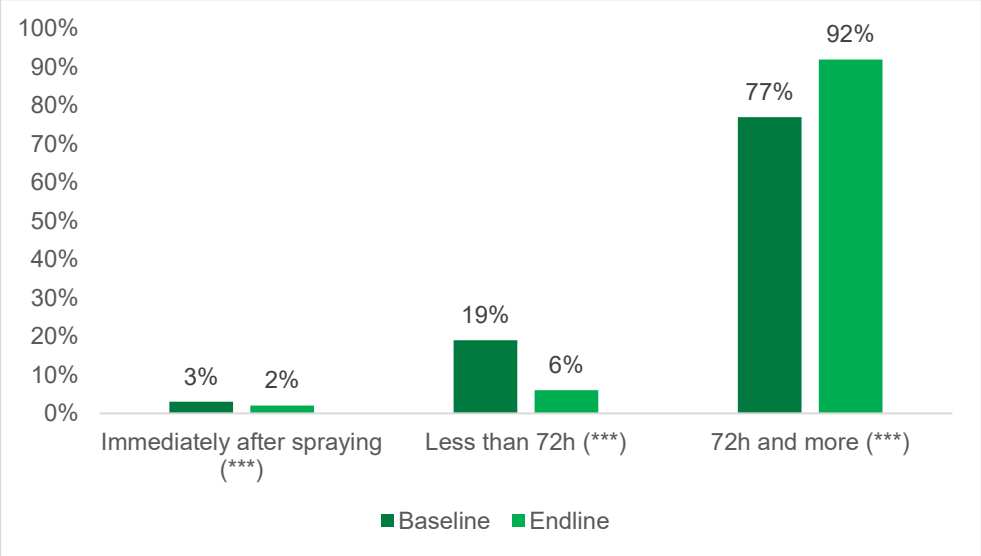
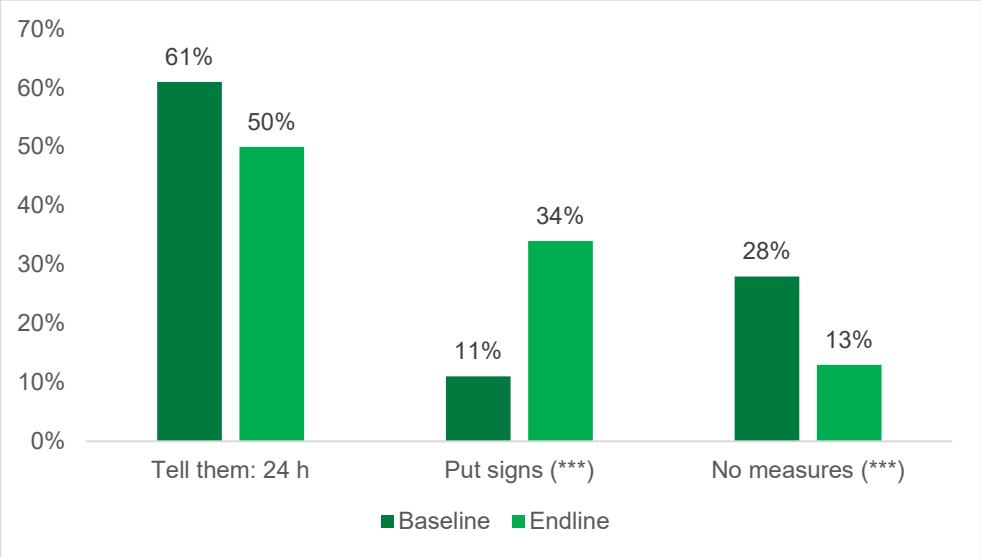


Figure 10b: Changes in Protective Actions After Spraying, before (baseline) and after the training (endline) (Ghana).



After the intervention, parents in both countries were more proactive in warning children about pesticide dangers and educating them on safe behaviours. The frequency and the relevance of the messages delivered to children improved.

- In Côte d'Ivoire, a high percentage (94%) of members reported having educated their children about the risks of pesticides in the two weeks before the post-training survey, compared to 75.8% before the training. Also, the training made participants realize that effectively educating children on staying away from pesticides takes a continuous effort rather than a one-off session: The share of participants who intended to speak to their children about pesticides related risks in regular intervals (monthly or weekly) increased to almost 95% (up from 44 % before the training); and those who stated that a one-off session should be sufficient decreased from 16% before training to only 3% after the training.
- In Ghana, the data also points to stronger engagement in child education following the training. The share of respondents who had educated their children about pesticides increased from 51% at baseline to 70% at endline. The content of these conversations also improved. For example, more parents reminded children not to touch pesticide containers (increase from 52% to 71%) and emphasised the importance of washing hands after contact with treated plants (increase from 3% to 23%).

In both countries, the results indicate a meaningful change in how families perceive their role and responsibility in protecting children and in how they prioritise risk communication within the household.

Qualitative findings

How was the training perceived, and what changes and recommendations emerged?

To complement the quantitative findings, qualitative data were collected from participants and other stakeholder groups within the community to capture whether any effects of the intervention had spread to the wider community, and whether a sustainable shift in risk awareness and safety practices could be expected. Also, stakeholder groups were asked to share their ideas and suggestions on how the interventions could potentially be extended for deeper and longer-term impacts.

How did participants and other community members perceive the training and its broader value?

Overall, the training activities were found to be enriching and useful. They were appreciated because the training helped to strengthen their knowledge and awareness and led to a noticeable change in behaviour within their households and within the community more broadly. Also, training participants felt empowered that they had gained insights into a technical subject from which they were previously excluded.

Overall perception of the project

Participants expressed strong appreciation for the initiative, describing the training as impactful, behaviour-changing, necessary, and eye-opening.

> *"The training is a good initiative as it opened our eyes to things we never thought were harmful to our health."* VSLA member in Bunsu, *Ghana*

Training methods

Participants appreciated the training methods, with pictures and role plays significantly enhancing understanding and engagement. However, they stated that the training duration was very limited. They recommended extending the training and spreading it over more sessions to allow for more discussion and a deeper comprehension of the complex topics.

> *"The training sessions were well organised, and the sessions were very easy to understand."* VSLA Member in Taylorkrom, Ghana

> *"The involvement of pictures and role plays made it exciting."* VSLA Member in Taylorkrom, Ghana

Building knowledge and awareness

The focus group discussions confirmed that the training had increased participants' knowledge and awareness of the dangers associated with the use of pesticides, particularly herbicides. Some participants shared that while they were already aware of pesticide risks, the training introduced several new and critical insights, for example, on risks related to exposure of pregnant and lactating mothers.

> *"Personally, I didn't know that the product could even kill people, because when we go to use the products, the empty boxes are often cut up like this, and then people wash in them and drink the water. In any case, we work with it, we didn't know it could destroy people."* VSLA member in SAGUIPLEU, Côte d'Ivoire

Change in practices within the community

At the end of the training, each VSLA adopted resolutions in priority changes in practices to ensure children's protection. However, they realised that some changes take longer to manifest than others, and that certain resolutions will become relevant only during the period of spraying, so it remains to be confirmed whether participants will be able to adopt them.

Training participants highlighted improved practices in the following areas:

- Pesticide use within the village reduced
- Community members used personal protective equipment (PPE) more consistently
- People stopped reusing empty pesticide containers
- People adopted safer solutions for storing pesticides out of the reach of children
- Fields were marked more clearly after spraying, and community members observed more rigorously that no-entry periods were respected

> *"At first, we didn't know any better, so we sprayed weeds everywhere in the village. But now, thanks to the training, we don't spray as much. And children no longer play with empty boxes, so we've changed. You could say it's brought about a change in the village. We saw people spraying weeds everywhere in the village, and we saw that they stopped."* VSLA Member in Tiaplue, Côte d'Ivoire

> *"I have erected locked storage to store pesticides away from children."* VSLA Member in Anhwiasu, Ghana

> *"Yes, there has been a change. Before, parents didn't wear gloves or face masks, but now they wear jumpers, face masks and boots to pump."* Child participating in a FGD in BLEDY-DIEYA, Côte d'Ivoire

Empowerment of VSLA members

VSLA members stated that the training gave them a sense of empowerment, which was felt particularly by female members. Through the training, they gained an understanding of an important subject related to agriculture, which is traditionally perceived as a man's domain. The participants acquired self-confidence and now feel encouraged to speak about an issue which requires all members in the community to work together to protect the health of children.

How did the facilitators perceive the training method?

The training facilitators shared the impression that the training was received with great interest and that it filled significant gaps in participants' understanding of the dangers associated with pesticides. They confirmed that the training **helped to empower VSLA members**, notably the female members, and strengthen their participation in decisions concerning the handling of pesticides, which was previously considered an exclusive responsibility of the farmer. Families had understood that since these hazardous products are present within the community and within households, it's a shared responsibility to manage their use. Thanks to the knowledge acquired, participants felt encouraged to discuss with other community members when they observe inappropriate practices.

> *"This training has strengthened women's participation in decisions about pesticide practices and uses to some extent. With the training they have received, they can learn and discuss certain issues with members of the community about certain behaviours and actions that they do not approve of."* ICI technical agent, Côte d'Ivoire

> *"The approach gives them a voice and an active role. There is capacity building, i.e. training VSLA women on pesticide risk and management."* ICI technical agent, Côte d'Ivoire

Facilitators applauded the **methodology** because it was interactive, practical, and therefore effective. They highlighted the use of **role plays, demonstrations, and visual aids** as excellent techniques that simplified complex topics and promoted engagement. The participatory nature of the sessions encouraged discussions and sharing of personal experiences, which deepened understanding.

It was found to be particularly effective to **give value to participants' existing knowledge**: Sharing experiences and acknowledging prior knowledge were seen as effective ways to develop new and improved practices that reflect local realities. They also approved the concept of participants taking the lead on formulating resolutions for more responsible practices.

In addition, the teams highlighted that the training-of-trainers approach strengthened the facilitation and leadership skills of technical staff and encouraged fruitful exchanges and mutual learning between the different implementing partners.

> *"Now, in terms of methodology, I think the approach is good, eh, or the participatory approach... but I've seen that it's good, the participatory approach is a good method*

because it engages the participants and also allows for, eh, a better understanding." ICI technical agent, Côte d'Ivoire

"Because the very fact of going to people to get an idea of what they know about pesticides well before coming to give them training and then coming back again, some time later, to see the impact of the training that was given, I find this approach, I would say, I don't know how to put it, this procedure to be good." PDA trainer, Côte d'Ivoire

Facilitators also appreciated the clarity of the training documents and the inclusion of easy-to-understand action items and a facilitator's guide. However, they noted some room for improvement, notably adding more pictures to make certain topics easier to understand. They also said that the training duration was too short, so some sessions felt overloaded.

What feedback and recommendations did the training facilitators and implementing partners share on the overall approach?

Training facilitators and PDA agents shared the following recommendations regarding further improvements and scale-up of the training:

- Visual aids are key for conveying messages around pesticide-related risks and good practice.
- A variety of formats and communication channels (e.g. more practical demonstrations, films, radio programmes, posters shown at central locations within the community, etc.) should be considered to deepen participants' understanding of the topic and awareness of the risks and reach a broader audience. Also, they emphasised the need to formulate the key messages in the local language.
- Child protection is a shared responsibility in each household. Therefore, all responsible adults in the household (men and women) should be invited to jointly participate in the training. This will help ensure that all responsible adults within the family have a common understanding of the risks and dangers of pesticide use and agree on priority measures to take within the household.
- Time management is key: the agenda for the training should not be overloaded; it is better to cover fewer topics but leave sufficient time for experience sharing and discussion.
- To keep the momentum for the topic and ensure community-wide dissemination, and to support participants' continued efforts to put the recommended measures into practice, it was proposed to designate "champions for better protecting children against pesticides" within each group. To support the work of the champions, occasional monitoring visits by the field trainers and refresher training will be helpful.
- Changing practices and routines takes time. For evaluating the intervention's impact on behaviour change, an evaluation several months after the training would provide a more realistic picture. Also, the main spraying period would be a critical period for refresher sessions, to reinforce the resolutions on good practices, and to collect data on changes in practices.

"If we want to improve it, we should do so with educational films featuring scenes which reflect the reality of pesticide use in the community." ICI technical agent, Côte d'Ivoire

"We could train some people in the local language, if possible, for a better understanding of the concepts." ICI technical agent, Côte d'Ivoire

"The training must be supported by practical demonstrations, as we are dealing with older people. That's what's needed." ICI technical agent, Côte d'Ivoire

How did teachers and local health workers evaluate the overall approach, and what were their recommendations?

To round up the community's feedback, teachers and health workers were also invited to share their feedback and recommendations on how the interventions could be made more impactful at the community level. Overall, teachers and health workers recognised the value and relevance of the initiative to combat children's exposure to pesticides. For them, the project represents a significant step forward in protecting rural communities from the dangers of pesticides used in agriculture and in the village.

To improve the effectiveness of the approach, health professionals said they would be happy to be involved from the outset in the development of prevention strategies. They suggested that their active participation could help ensure a coherent approach and consistent messages conveyed by different actors. However, they stated clearly that they currently lacked the necessary background and expertise on the effects of pesticides and preventive measures. Hence, they would need additional training to build their skills and enable them to counsel community members on safe behaviour, particularly for children and pregnant women, and also to deal with cases of acute poisoning.

"The project aims to protect children. When we talk about protecting children, we are talking about health. It's a good project." Nurse in SOAPLEU, Côte d'Ivoire

"We haven't received training for these cases, but we know from the signs they present that we can take care of them. Otherwise, we haven't received any specific training for this." Nurse in BLEDY-DIEYA, Côte d'Ivoire

Teachers reckoned that school-based sensitisation would be highly effective to support parents' efforts in sensitising their children with respect to toxic products. However, they also confessed that they would need additional training to deepen their understanding of pesticide-related health risks and measures to protect children.

What did community members and stakeholders recommend to deepen and sustain the effects of the intervention?

Several constructive ideas and recommendations were shared by different members of the community during focus group discussions and key informant interviews. The following points came through most strongly:

- To engrave the key messages from the training in participants' memory and enable them to convey these effectively to other community members, visual aids would be helpful; for example, posters installed in a publicly accessible place or the VSLA meeting point.
- The broader community should be targeted with an awareness-raising campaign to ensure a common basic understanding of pesticide-related risks.
- For awareness raising amongst the broader community, a range of multimedia channels should be employed, including posters, audio messages in local languages, and videos to reach a broader audience.
- Involving local leaders from the beginning is key. Their strong voice and authority will help reinforce the messages amongst community members. In order to persuade them to become ambassadors for this cause, they will first need to be targeted with training and awareness raising on pesticide-related risks.
- Complementary support measures are needed to create communities which are truly protective against children's exposure to pesticides. Priorities would be:
  - Support for farmers and local spraying service providers to acquire quality PPE
  - Support for the construction of safe pesticide storage facilities and locked storage structures to reduce household exposure risks
  - Safe disposal channels for empty pesticide packages to provide a convincing alternative to the practice of burying and burning them
  - Alternative childcare solutions to prevent families from taking their children to the fields.

Conclusion

Overall, the evaluation has shown that the pilot activities implemented by ICI to better protect children in cocoa-growing communities in Ghana and Côte d'Ivoire were effective, relevant and suited for scale-up. The findings demonstrate that the targeted behaviour change training with local VSLA members can significantly improve participants' knowledge, attitudes, and practices related to pesticide risks for children.

The training method was applauded by participants and facilitators

- for being participatory and interactive
- for including demonstrations and visual aids which help make invisible risks more tangible
- for building on and recognising people's existing knowledge and experience,
- and for giving the group the lead on formulating resolutions for better practices.

Beyond knowledge gains, the intervention helped participants recognise their responsibility in protecting children from pesticide exposure. Also, the female VSLA members were empowered through the insights on a technical subject from which they were previously excluded.

The training targeted at the local VSLA can therefore be expected to lead to some spillover effects on the broader community. Participants felt encouraged to bring the subject up with other members of their household and alert farmers who did not respect safety measures when handling and applying pesticides. Also, the training made parents more proactive in educating their children about pesticide dangers.

Despite these successes, the evaluation highlights several limitations and areas for improvement. First, while knowledge gains were substantial, some misconceptions persist, particularly regarding the limitations of protection offered by PPE. Also, training facilitators need to put additional emphasis on explaining long-term health risks from exposure to pesticides, even when no immediate symptoms occur.

Second, the depth of participants' comprehension of the complex topics could be enhanced by extending the training duration, by assigning group champions for the responsible handling of pesticides, and by offering refresher training. Also, it is recommended to plan for visual aids with key messages to remain in the community after the training, to support training participants in conveying the messages to others in the community.

Stakeholders proposed practical recommendations to deepen and sustain impact in the community. These include:

- Expanding the use of visual aids and multimedia tools (posters, films, radio messages) in local languages to reinforce key messages and reach broader audiences.
- Involving all responsible adults in households—men and women—in training sessions to ensure shared understanding and commitment.
- Designating community "champions" to maintain momentum, supported by refresher trainings and monitoring visits during critical spraying periods.
- Integrating school-based sensitisation and building the capacity of teachers and health workers to deliver consistent messages and respond to cases of exposure.
- Complementing behaviour change efforts with structural support, such as the provision of PPE, the construction of safe storage facilities, and the establishment of disposal channels for empty containers.
- Providing access to well-trained and well-equipped spraying service providers, such as Community Service Groups, so that this hazardous work is done by professional adults who apply the most effective protection measures.

Looking ahead, the pilot offers valuable lessons for scaling and mainstreaming the approach in cocoa sustainability programmes. The evidence suggests that behaviour change interventions targeting community groups—especially those with strong female representation, such as VSLAs—are an effective entry point for addressing pesticide-related risks. However, in order to deepen and sustain impacts, it is recommended to integrate this activity within broader strategies and to build partnerships with local leaders, cooperatives, and service providers to embed the messages within community norms and supply chain standards.