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Final Evaluation and Scaling Report

Head Safe. Helmet On.



September 2016

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Head Safe. Helmet On.

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September 2016



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Acronyms

AIP – Asia Injury Prevention

BCC – Behavior Change Communications

EEC – Enabling Environment Change

HSHO – Head Safe. Helmet On.

MoEYS – Ministry of Education, Youth, and Sport

NRSC – National Road Safety Committee

RCVIS – Road Crash Victim and Information System

SBP – School-Based Program

SDG – Sustainable Development Goal

USAID-DIV – United States Agency for International Development's Development Innovation Ventures

US CDC – United States Centers for Disease Control and Protection

Executive Summary

This Final Evaluation and Scaling Report assesses the “*Head Safe. Helmet On.*” (HSHO) project in Cambodia, supported by the United States Agency for International Development’s Development Innovation Ventures (USAID-DIV) Grant No. AID-OAA-F-15-00012 to AIP Foundation.

The project sought to increase helmet use among motorcycle passengers, thereby reducing the number of injuries and fatalities on the road and avoiding associated losses to Cambodia’s developing economy. To do so, three mutually reinforcing campaigns were implemented at both a national and local level with a focus on three target provinces, Phnom Penh, Kandal, and Kampong Speu:

1. **School-Based Program (SBP)** increased helmet use and road safety skills at 18 target schools by providing quality helmets and road safety education to all students and teachers while reinforcing road safety messages through various interactive activities that also engaged parents and other stakeholders.
2. **Behavior Change Communications (BCC)** raised awareness on the importance of motorcycle passenger helmet use, including for children, and improved related attitudes and practices through mass media, street-based, and commune-based campaigns.
3. **Enabling Environment Campaign (EEC)** supported the passage and enforcement of Cambodia’s new passenger helmet law by leading strong advocacy efforts through continuous engagement of relevant stakeholders in meetings, workshops and study tours.

During the implementation period from June 2014 to June 2016, HSHO benefitted 226,358 people directly, and reached 14.04 million people indirectly. The project also realized notable achievements by the end of its two-year period. Cambodia passed a new road traffic law in January 2015 and began enforcement of the new law in January 2016 that – for the first time – required passengers, in addition to drivers, to wear helmets. Enforcement of the passenger helmet law for adults has contributed greatly to increases in adult helmet use – both adult passengers and drivers – from project start to end, preventing an estimated 349 casualties and saving Cambodia \$3,089,316 in avoided losses in HSHO’s three target provinces. Looking at the increase in adult passenger helmet wearing rates from 11.3% to 36.0% alone, an estimated 97 casualties were prevented and losses of \$859,273 were avoided across the target provinces. On national roads where 68% of crashes occur in Cambodia, adult passenger helmet wearing rates were even higher by the end of the project, reaching 44.5% on average. Additionally, a woodwork effect was seen for motorcycle driver helmet rates in the three provinces, which increased from 63.0% to 75.7% over the course of the program, preventing 252 casualties and saving Cambodia an additional \$2,230,073. Importantly, the nationwide enforcement of passenger helmet use suggests that these estimates are necessarily underestimates of the true value of the HSHO program as they only reflect increases in adult helmet use across the three project provinces.

Current enforcement of the passenger helmet law does not incorporate children into the sub-decree on fines. Moving forward, there is an opportunity to save additional lives by incorporating this vulnerable group into both enforcement measures and the sub-decree on fines. However, it is important to note that SBP activities have been directly linked to improved outcomes for children, with child helmet use increasing by 74% and at least 332 children identified as being involved in a crash while wearing a helmet supplied by the project. 104 of those children were passengers on

motorcycles at the time of the crash.

Based on experiences over the last two-years, a modified project has potential for larger scale-up supported substantially through the public sector, with some resources reallocated to maximize the reach and impact of the program. While SBP efforts saw substantial gains in helmet wearing rates amongst school children, the program was also very resource-intensive and future efforts would be best scaled down to select 'model' schools while simultaneously advocating for policy change and child helmet enforcement as part of EEC for nationwide scaling. BCC activities should be refocused on achieving greater reach at the provincial, district, and national levels, shifting efforts away from grass-roots activities in targeted communes which did not yield significantly greater results than those achieved through broader campaigns.

The following Report elaborates key objectives and results of the project, as well as a review of its program design, implementation, and evaluation methodology. After discussing an analysis of the program and its outcomes, lessons learned from implementation, and overall cost-effectiveness of the model, the Report concludes with evidence-based justification for scaling a refined HSHO model both in Cambodia and abroad.

Background

Overview of “Head Safe. Helmet On.” (HSHO)

HSHO implementation extended from June 1st, 2014 to June 1st, 2016 in 18 target communes selected from three provinces: Phnom Penh, Kampong Speu, and Kandal. Elements of the project – namely mass media campaigns and legislative and policy advocacy – had nationwide reach.

The three components of the project are as follows:

1. **School-Based Program (SBP)** increased helmet use and road safety skills at 18 target schools by providing quality helmets and road safety education to all students and teachers while reinforcing road safety messages through various interactive activities that also engaged parents and other stakeholders.
2. **Behavior Change Communications (BCC)** raised awareness on the importance of motorcycle passenger helmet use, including for children, and improved related attitudes and practices through mass media, street-based, and commune-based campaigns.
3. **Enabling Environment Campaign (EEC)** supported the passage and enforcement of Cambodia’s new passenger helmet law by leading strong advocacy efforts through continuous engagement of relevant stakeholders in meetings, workshops and study tours.

USAID-DIV invested a total of \$635,993 in the HSHO program. With cost-share from The UPS Foundation and FIA Foundation, investment for the project reached \$1.1 million. Additional cost-share partners include the Road Safety Fund and the United States Centers for Disease Control and Prevention (US CDC) who provided in-kind support.

Implementing Organization

AIP Foundation is a U.S. registered 501 (c)(3) non-profit organization with the mission to prevent the millions of unnecessary road injuries and deaths that disproportionately affect rapidly mechanizing, low- and middle- income countries. Founded in 1999 in Vietnam, AIP Foundation has expanded its offices to Cambodia, China, and Thailand. Today, the organization comprises over 40 staff members with valuable skills and experience as road safety practitioners knowledgeable of local contexts. AIP Foundation’s partners are from both the public and private sector, and include the United States Agency for International Development’s Development Innovation Ventures, the U.S. Centers for Disease Control and Prevention, the FIA Foundation, Safe Kids Worldwide, Save the Children, The UPS Foundation, Abbott Laboratories, Chevron, Johnson & Johnson, and local government agencies.

Program Design & Implementation

Goals and Targets

HSHO set an ambitious target of increasing motorcycle passenger helmet use rates in intervention areas from an average of 10% at the district level to 60% by the end of its two-year implementation with the larger goal of reducing the rate of injury and death among motorcycle passengers in Cambodia.

The two-year project has seen substantial gains with passenger helmet use, as well as increases to driver helmet use that were not originally included in the targets for the project. Adult and child passenger

helmet use increased by over 20% across the three provinces, from a baseline of 10.3% to an end-line of 33.4%, and driver helmet use increased by over 10%. Despite these substantial gains, HSHO was unable to meet the aggressive 60% target within the two-year time frame due in part to delays with the enforcement of the passenger helmet law. However, it is important to note that the project still achieved marked and cost-effective impact, which will be discussed in greater detail below.

Implementation

Implementation of HSHO took place in Cambodia at national, provincial, district, and commune levels over a two-year period. Key activities under each component are outlined below.

School-Based Program (SBP)

SBP focused its efforts on 18 schools selected from target communes in Phnom Penh, Kandal, and Kampong Speu provinces during the two school years that fell during the project (November 2014 – August 2015; November 2015 to August 2016). Key activities implemented under the SBP component of HSHO included the following:

- Development of road safety curriculum and organization of teacher training workshops to introduce effective methods for teaching road safety
- Installation of helmet use billboards and posters
- Helmet donations for students and teachers at large launch ceremonies
- Organization of parent information sessions
- Distribution of parent commitment letters asking them to pledge their support to the project and child helmet use as well as SBP and BCC flyers with key road safety messages
- Implementation of tailored student activities to promote road safety for each school context

Behavior Change Communications (BCC)

BCC implemented both grassroots and mass media campaigns from April 2015 to May 2016 to compensate for the long lead time required for both designing and producing high-quality material for distribution and to receive feedback from key stakeholders – including endorsement from the national government. Select nationwide and district-level activities included the following:

- Dissemination of press releases and public relations campaign across online, print, and social media platforms to reinforce key BCC messages
- Production and airing of both television and radio commercials as well as roundtable discussions and talk shows
- Installation of billboards, banners, and motorcycle taxi (tuk-tuk) panels with important road safety messages at the district-level
- Organization of campaign days across all targeted districts promoting passenger helmet use through volunteer information sharing as well as distribution of flyers, posters, and helmet vouchers in the target districts

Commune-level activities included:

- Organization of door-to-door awareness campaigns
- Support for commune-based working groups to conduct road safety events
- Distribution of campaign messages through loudspeakers

Enabling Environment Change (EEC)

The EEC component engaged with stakeholders on a regular basis, adjusting focus as needed from advocating for the passage of the passenger helmet law to working with government stakeholders to design an action plan for enforcement of the law. Due to the nature of advocacy efforts, many of the EEC activities were conducted at the national level including, but not limited to, the following:

- Dissemination of policy briefs about the draft passenger helmet law
- Organization of nationwide stakeholder workshops aimed at building the capacity of government stakeholders
- Coordination and support for the development of a National Passenger Helmet Enforcement Action Plan implemented in January 2016
- Organization of an enforcement study tour with members of the National Road Safety Committee (NRSC)

At the local level, EEC activities mirrored those conducted at the national level in order to further build capacity of district and commune officials to incorporate road safety as a priority, which included the following:

- Organization of district-wide stakeholder workshops and commune-wide meetings to engage stakeholders with the project
- Coordination and support for the development of district passenger helmet enforcement action plans
- Organization of an enforcement study tour with representatives from the traffic police
- Organization of commune-wide meetings to share best practices and coordinate efforts

The three components were designed to mutually reinforce one another by reaching Cambodian road users with important safety messages through various platforms and strategies. While SBP and BCC were implemented without major obstructions to the projected timeline, EEC experienced a significant challenge to achieving its stated objectives when enforcement of the new passenger law was delayed by six months from June 2015 to January 2016, as is elaborated below under the Challenges During Implementation section.

Stakeholder Engagement

Given the nature of project activities, HSHO required active involvement with government stakeholders across all three components. In order to effectively engage with these stakeholders, AIP Foundation relied heavily on pre-established working relationships with key government counterparts developed over years of work in Cambodia. These long-term relationships were crucial for pushing forward initiatives and mobilizing the necessary resources for HSHO implementation. Without these connections in place, there would have been additional obstacles and delays with implementing the project, and EEC advocacy efforts in particular would likely have been much less effective.

The long-term presence of AIP Foundation in Cambodia and the knowledge of local staff also allowed for the effective navigation of the complex procedural processes inherent to working with government stakeholders, which often included lengthy, formal, and paper-based communication. In addition, AIP Foundation staff members have a well-developed knowledge of the appropriate channels for stakeholder communication – essential within such a hierarchical structure – that relies upon previous

efforts to identify and map out stakeholder roles and capabilities as well as internal government power dynamics.

Government stakeholders engaged with implementing the project include the following:

Table 1: Stakeholder Matrix

<i>Stakeholder</i>	<i>Description</i>	<i>Type of engagement</i>
National Road Safety Committee	Lead body responsible for coordinating road safety activities nation-wide; Conducts regular awareness campaigns on national television and radio; Oversees the Road Crash Victim and Information System	Government counterpart, national level
Department of Traffic Police and Public Order, National Police, Ministry of Interior	Responsible for traffic police enforcement of the traffic law and driver education, action planning at the national and sub-national level and awareness raising campaigns	Government counterpart, national, provincial, and district level
Ministry of Education, Youth, and Sport (MoEYS)	Gives endorsement for SBP, access to schools and in-kind support	Government counterpart, national level
Ministry of Information	Provides support for BCC mass media airings; Supports NRSC awareness raising efforts	Government counterpart, national level
Provincial, district, commune level councils	Gives approval to local level road safety activities	Government counterpart, sub-national level
Commune-level Road Safety Working Groups	Oversees community level road safety education and awareness raising activities	Government counterpart, commune level
School management	Implements and sustains school-based activities on a regular, long-term basis	Public servants counterpart, Commune level

Beneficiaries

HSHO activities targeted primary school students, their parents and teachers, motorcycle passengers between 15 and 44 years of age, and government officials and traffic police residing or working within the target provinces.

These direct beneficiaries of the HSHO project were selected for various reasons:

- Children currently display markedly low helmet wearing rates, with the most common reason being that adults do not put helmets on their child because they think they are too young.¹ As such, primary school students are particularly vulnerable road users who are also still developing the skills, attitudes, and behaviors necessary for staying safe as pedestrians and passengers now and into adulthood;
- Parents and teachers are a respected source of road safety information for children, so influencing their beliefs is crucial to changing child helmet practices;²
- Road users between 15 and 44 years of age have the highest fatality rate across Cambodia;³ and
- Government officials and traffic police residing or working within target districts and communes are the key decision-makers in charge of enforcement of the passenger helmet law and set the standards for behavior in their communities.

The above beneficiaries were selected from three target provinces based on a close review of road safety “black spots,” which are the most dangerous locations for road users. Together, the three target provinces – Phnom Penh, Kandal, and Kampong Speu – made up nearly one-fourth of road fatalities in Cambodia prior to the start of HSHO in 2013.⁴ These three provinces, and Cambodia as a whole, are characterized by a low-income population. While Phnom Penh had a higher average family monthly income of 690 USD as of 2014, the average household income in Kandal and Kampong Speu was likely between the rural average income of 320 USD and the urban average income of 450 USD.⁵ This small amount of money is expected to support an entire family, or 4.6 people on average.⁶

Within each province, three communes were selected from each of the two target districts for focused program implementation. These regions were selected based on the following criteria:

- Crossed by at least one National Highway, given that 68% of crashes occur on National Roads;
- High numbers of motorcycle crash injury, fatality, and casualty cases according to the most recently available data;
- Potential resources to support road safety and passenger helmet use action plans;
- Complementary road safety activities, which can support and build upon our successes;
- Commitment, enthusiasm, and readiness on the part of district leaders to participate in road safety activities; and
- Demonstrated resources and capabilities that would contribute to the sustainability of the project results after the conclusion of HSHO efforts.

HSHO reached a total of 226,358 *direct beneficiaries*,⁷ exceeding our target of 222,445:

- SBP Program: 22,735 primary school students; 643 teachers; 36,788 parents; and 210 local community members in target provinces.

¹ AIP Foundation (2011). Cambodia Helmet Vaccine Initiative Key Baseline Research Results. Phnom Penh, Cambodia.

² Ibid.

³ 2013 Annual Report Road Crashes and Casualties in Cambodia, Road Crash and Victim Information System.

⁴ Ibid.

⁵ Cambodia Socio-economic survey 2014, National Institute Statistic, Ministry of Planning.

⁶ Release of Preliminary Results of 2013 Inter-censal Population Survey of the Kingdom of Cambodia. National Institute of Statistics, Ministry of Planning.

⁷ Includes beneficiaries from the eighteen target communes and schools, as well as nationwide.

- BCC Program: 29,375 motorcycle passengers who received helmet safety literature; 124,658 commune residents who received direct communications such as loudspeaker announcements; 9,289 individuals who engaged directly with road safety messages through social media, radio, or TV at national, provincial, district, and commune levels.
- EEC Program: 2,660 stakeholders who directly engaged in meetings or workshops at national, district, and commune levels.

A total of *14.04 million indirect beneficiaries*, approximately 90% of the national population,⁸ were reached through national broadcasting on mass media platforms – far exceeding the original target of 1,634,555:

- BCC media campaigns were aired twice (April – July 2015, December 2015 – April 2016) across four television stations: CTN, MYTV, HMTV, and TV5.
- Between April and July 2015, 11.9 million people were reached by the AIP Foundation television commercial.
- Between December 2015 and April 2016, 14.04 million people across Cambodia viewed the BCC television campaign, 7.1 million of which were between the target ages of 15 and 45.

Challenges During Implementation

The most substantial challenge to the effective implementation of HSHO was the delayed enforcement of the national passenger helmet law. Promulgated in January 2015, the law was envisioned to go into effect six-months later. The operational design of HSHO therefore assumed that enforcement of the law would commence in July 2015 and would run alongside and reinforce other components of the program for a full 12 months. However, delays to enforcement resulted from:

- Structural and leadership changes in the NRSC, the body responsible for coordinating the revision of the law and its rollout;
- Long legislative processes to adopt a sub-decree to the law on penalties for traffic offenses; and
- Limited capacity to ensure public awareness nationwide of changes under the law as well as the sub-decree for increased fines before the start of enforcement.

These delays were beyond the capacity of HSHO to prevent or overcome entirely. However, positive results of HSHO efforts to mitigate these delays are illustrated as follows:

- BCC was active in raising awareness of the upcoming enforcement measures, which had a crucial secondary effect of holding the government accountable to its voiced commitment to begin enforcement as planned.
- Even with delays, enforcement of the passenger helmet law began less than a year after its promulgation – an achievement that speaks to the efficacy of EEC stakeholder capacity building, advocacy, and support. Enforcement of the earlier driver helmet law did not begin for almost two years after the law was passed.

Less impactful challenges to implementation are described below:

- Under SBP, it was difficult to fully engage with parents of primary school students due to limited

⁸ Assumes a national population of 15,577,000. See <http://populationpyramid.net/cambodia/2015/>

time availability and scheduling conflicts. In addition to receiving feedback to schedule workshops at more convenient times, future programs could incorporate shorter, more regular parent outreach sessions during the daily pick-up times at the school-gate, where parents often wait for their children for ten to fifteen minutes.

- Under EEC, there were often minor but frequent delays for receiving signatures or approval of letters, plans, etc. due to long procedural processes required by government structures. A potential solution would be to reduce paperwork by encouraging more electronic communication amongst government stakeholders at the national level. Another suggestion would be to combine deadlines as best as possible, while continuing to follow up energetically with government counterparts.
- For many years there has been limited funding and public interest in improving road safety. As a result, in addition to focusing on influencing behavior change through BCC efforts, HSHO has the additional challenge of influencing stakeholders and the public to recognize and prioritize road safety as a public health issue.

Evaluation Design

To evaluate the impact of grassroots level activities, HSHO selected 18 communes from six districts across the three target provinces to implement targeted intervention activities. For comparison purposes, six communes with similar characteristics to the target communes were selected as controls and monitored.

Achievement of project goals and objectives was evaluated through comprehensive short-, medium-, and long-term indicators. While an overview appears below, please see Annex I: Monitoring and Evaluation Framework and Annex II: Indicator Reference Sheet for full details.

- SBP: Helmet observations at the school gate; crash reporting for students; knowledge tests among students.
- BCC: Tracking materials distribution and community engagement; measuring changes in reported knowledge, attitudes, and practices; media monitoring of television and radio broadcasting as well as social media airings.
- EEC: Tracking materials distribution and stakeholder engagement; developing national and sub-national action plans and receiving commitment letters; benchmarking passage and enforcement of the law; tracking enforcement activities.
- Project-wide: Street-based helmet observations; extraction and analysis of road crash and victim information data with technical support from the US CDC; tracking press coverage.

Two major challenges related to the evaluation design of HSHO are described below:

1. The intervention had nationwide reach across all 25 provinces through both advocacy and mass media. However, appropriate measures were not in place to capture results beyond the three target provinces where grassroots and school-based campaigns took place. While official government data recorded in the Road Crash Victim and Information System (RCVIS) provides data on a national scale, it does not capture helmet use directly and there is a substantial data delay in capturing this information.
2. The control groups were contaminated. Control and target communes were established within the three target provinces and could only capture differences in commune-level activities such

as loudspeaker announcements and door-to-door campaigns that were only conducted in the target communes. Due to the nationwide scope of mass media and enforcement, as well as provincial and district level activities such as billboards, banners, tuk-tuk panels, and street-based campaigns, controls were exposed to a portion of project activities, which could have increased control group helmet use rates.

Moving ahead, evaluation tools should be designed to capture the impact of nationwide campaigns. However, future evaluation design must also take into consideration the resources required to conduct helmet observations of all representative groups at increased scale, as it can get costly to expand evaluation efforts.

Improvements could also be made with variable selection:

1. The design did not adequately anticipate the need to examine differences in helmet use rates along national and local roads. While AIP Foundation's Monitoring and Evaluation manager was able to parse this out retrospectively, it would be helpful moving forward to strategically conduct observations that can identify differences between these comparison groups. Additionally, a comparison of different national roads could help parse out what impact enforcement has on the increased helmet use observed along national roads in comparison to other confounding factors.
2. The evaluation plan did not directly incorporate a variable to determine the impact of police enforcement on helmet use rates. In the future, the evaluation design for street-based helmet observations should include a variable to account for enforcement by placing some video cameras adjacent to police checkpoints and others in areas less frequently patrolled by police.

Overall, the data collection process was accurate with slight infringements. Street-based helmet observations were sometimes conducted at locations near construction sites, which impeded traffic flow. In addition, school-based crash monitoring risks underreporting the true number of collisions, as primary school students often did not provide incident reports unless individually and regularly approached by teachers, who often do not have the capacity to do so. Official government data (RCVIS) risks being under reported as well, and there is a considerable lag in the availability of the most recent data. Some information that would be useful for more rigorously evaluating the impact of policy changes, especially enforcement, is not available to AIP Foundation, including the exact number of traffic police deployed; the exact number and frequency of checkpoints along national in comparison to local roads; and the level of training provided to traffic police on changes in the new road traffic law.

Impact Evaluation Design

Due to some of the limitations of the evaluation design referenced above, it is not possible to specifically determine the impact of nationwide activities. As a result, the impact evaluation analysis relies upon the increase in helmet use rates from baseline to end-line in the three target provinces only – inherently underestimating the true number of avoided casualties and losses across the twenty-two other Cambodian provinces.

The cost analysis relies primarily on the human capital methodology, which equates the value of human life with the discounted market value of the output produced by an individual over an expected lifetime. It is perhaps the most commonly used methodology for adjusting the value of future earnings based on

extensions or improvements to life. However, this methodology fails to recognize the cost of pain or suffering, or the benefit of pleasure and leisure.

For this Report, the willingness to pay methodology is offered as an alternative. This method considers more than just workplace output and seeks to determine the value of a life based on an individual's willingness to pay for reductions to the probability of death. The figures are based on global averages, which presents a particular challenge within the context of Cambodia's developing economy.⁹ To overcome methodological limitations of using willingness to pay calculations in the Cambodian context, interested donors could fund in-country surveys to get a more accurate estimate of the value of life as it pertains to the local economy.

Please refer to Annexes III – VIII for more details on formulas, cost categories, and data sources.

Results and Findings

Short- and Medium-term Results

All three components demonstrated strong success under both short-term and intermediate outcome indicators.

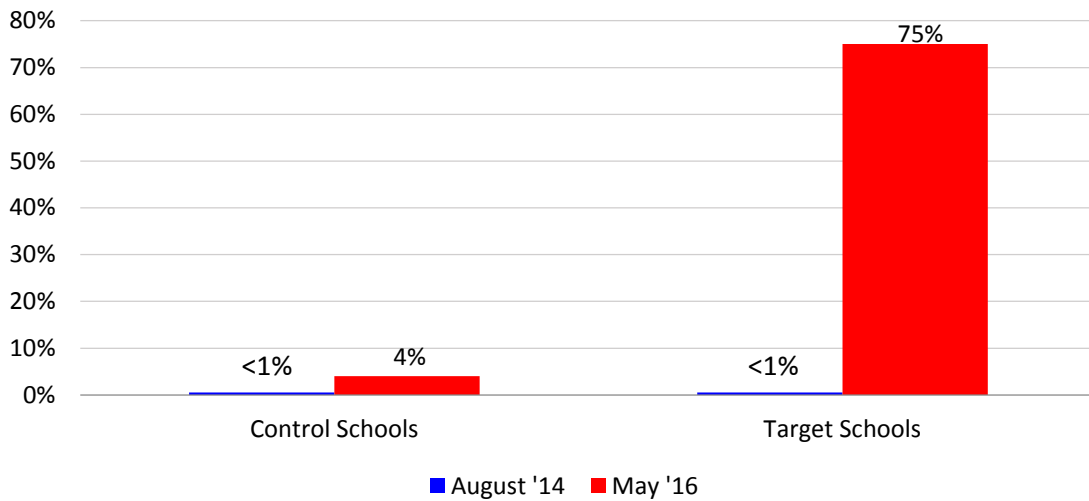
School-Based Programs (SBP)

The SBP short-term outcome is that students in target schools have improved awareness of the need to wear a helmet. From December 2014 to May 2016, the average score of students on the knowledge test increased from 56% to 88% at target schools.

The SBP intermediate outcome is that more children at target schools wear helmets when traveling by motorcycle and bicycle as measured through school-based helmet observations. From baseline to end-line, average helmet use among students across the 18 target schools increased from less than 1% to 75% compared to a much less substantial increase from less than 1% to 4% among students at the 6 control schools. See Figure 1 below.

⁹ See "Valuation of Accident Reduction," Institute for Transport Studies, University of Leeds, 2003, <http://www.its.leeds.ac.uk/projects/WBToolkit/Note11.htm> for further explanation

**Figure 1: Change in Helmet Use at Schools
Control vs. Target Schools**



Behavior Change Communications (BCC)

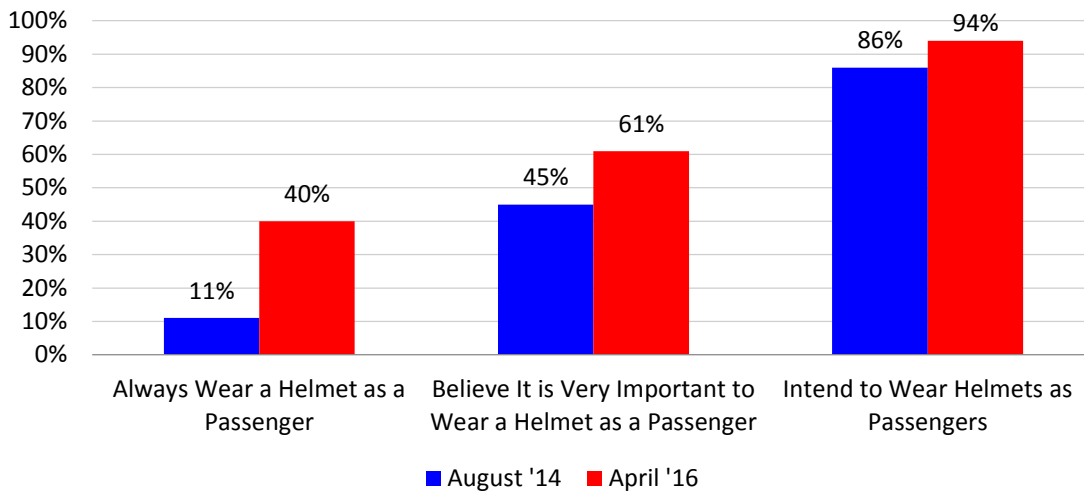
The survey evaluated the short-term outcome that motorcycle passengers in target areas have improved awareness of the need to wear a helmet. See Figure 2 below. From August 2014 to April 2016, the percentage of people surveyed from target communes who agreed that it was *very* important to wear a helmet as a passenger increased from 46% to 57%. Responses from control communes also increased from 43% to 65%, suggesting that commune-specific activities seemed to have a limited effect above and beyond broader geographic activities.

The survey also measured the short-term outcome of the BCC campaign that motorcycle passengers in target areas have improved attitudes toward helmet use. From August 2014 to April 2016, people surveyed who said they intend to wear helmets as passengers increased from 86% to 94% in target communes and from 90% to 100% in control communes. This increase in helmet use across target and control communes reflects the impact of nationwide campaigns and district level BCC efforts.

The intermediate outcome of the BCC campaign is that more motorcycle passengers in target areas report wearing helmets as measured through a knowledge, attitude, and behavior survey. From August 2014 baseline to April 2016 end-line, respondents who reported always wearing a helmet as a passenger in the previous month increased from 11% to 40% across target communes. Control communes had similar increases, rising from 9% to 45%.

Full topline and end-line reports on BCC efforts are included as Annex IX and Annex X respectively.

**Figure 2: Change in Attitudes and Behaviors
Baseline to End-line**



Enabling Environment Change (EEC)

EEC's short-term outcome indicators pertain to the creation of enforcement action plans. At a national level, EEC saw the successful adoption of the National Enforcement Action Plan for Passenger Helmet Use. EEC efforts at the provincial level have also spurred the approval of 2 out of 3 enforcement action plans and efforts at the district level have led to the approval of 4 out of 6 enforcement action plans.

Under EEC, the intermediate indicator is the number of fines issued by traffic police for non-helmeted passengers. Between January and June 2016, 41,349 fines were issued in the three target provinces as compared to the 0 issued prior to the start of HSHO when there was no penalty assigned to passenger non-helmet use.

Long-term Results

Examination of long term results – i.e. changes in helmet use rates and the rates of fatality and injury – help identify ways to best refine the model for effective, cost-efficient scaling. Observed helmet observation rates have been updated slightly from the previously submitted Behavior Change Communications and School-Based Program End-Line Evaluation Report submitted to USAID-DIV in June 2016. Please see Annex XI for data from the street-based observations. Helmet observations were conducted in the six target districts; however, these district-level rates can be assumed to be representative of helmet use rates at the provincial level.¹⁰

Avoided losses

As a result of successful enforcement efforts for adult passenger helmet use, which will be addressed in detail below, there was an increase in adult motorcycle passenger helmet use rates and a woodwork effect with driver helmet use rates. Based on these improvements, an estimated 349 drivers and adult passenger casualties were prevented across the three target provinces. These avoided casualties

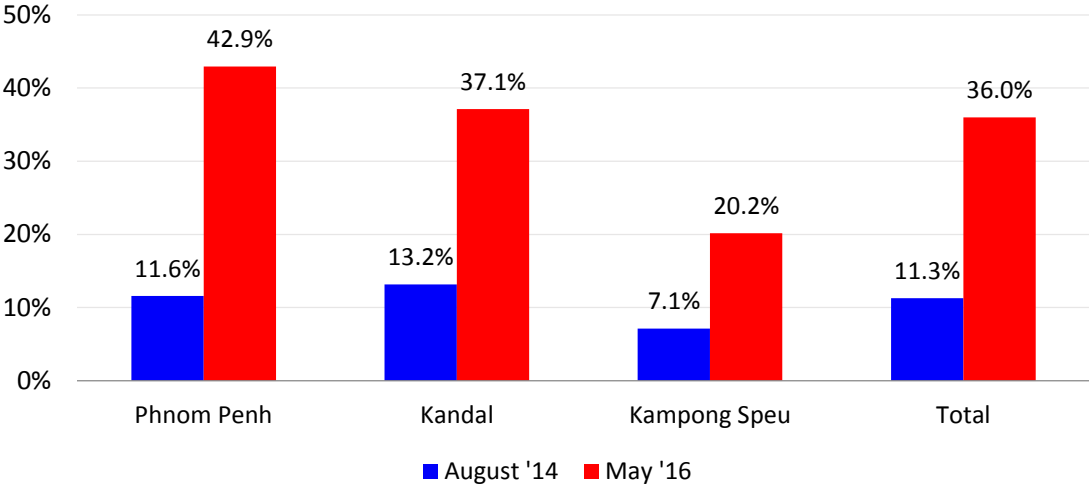
¹⁰ This assumption was discussed with the US CDC and reflects common practice. Other studies use less observation points to extrapolate to the provincial level.

translate to significant cost savings, as calculated using both human capital and willingness to pay methodologies. The human capital methodology, which was used originally for projections made during the HSHO planning stage and takes into account the cost of a fatality and the loss of future output, estimates that the change in adult helmet use rates led to cost savings of \$3,089,316 USD.

Separate analysis using a more robust willingness to pay methodology, which attempts to capture the value of pain and suffering avoided, the value of time lost due to illness, and the costs of medical treatment, offers cost savings of \$4,309,159 USD. This methodology is generally viewed as more reflective of true costs than human capital, but its assumptions, reliant upon global data, face certain limitations within the context of Cambodia’s less developed economy as discussed above.

Over the course of the HSHO project, adult motorcycle passenger helmet use rates in target provinces increased significantly from a baseline of 11.3% to an end-line of 36.0%. See Figure 3 below for the change in adult passenger helmet use for each target province and overall. All changes from baseline to end-line were significant.

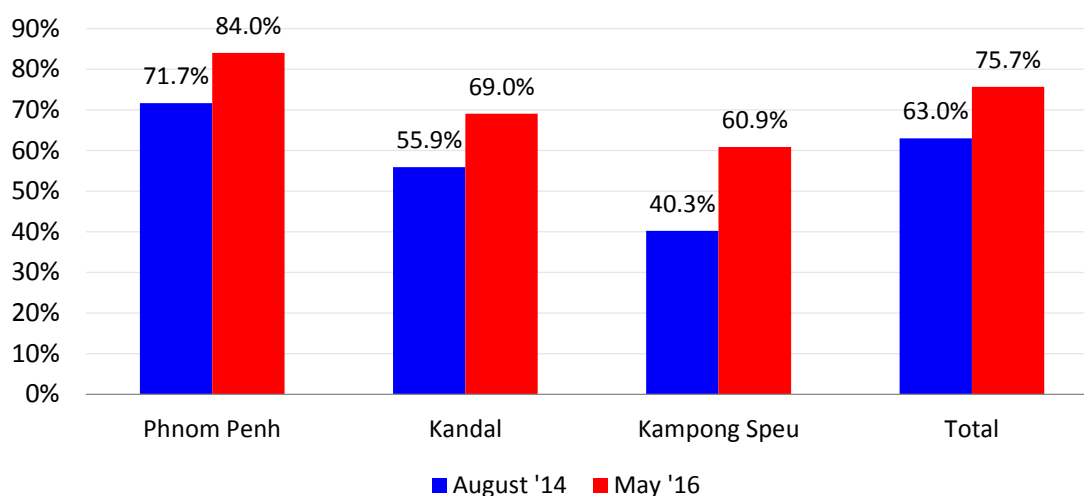
**Figure 3: Change in Adult Passenger Helmet Use Rates
Baseline to End-line**



Based on the change in adult passenger rates and assuming that only adult passenger casualties were avoided, an estimated 97 casualties were prevented across the three target provinces, leading to cost savings of \$859,243 USD. Please refer to Annex III for the human capital analysis. Using the alternate willingness to pay methodology offers cost savings of \$1,166,194 USD. Please refer to Annex IV for the willingness to pay analysis.

As shown in Figure 4 below, HSHO results also indicate a woodwork effect for drivers, with helmet use rates in the three target provinces increasing from 63.0% to 75.7% on average over the two-year program.

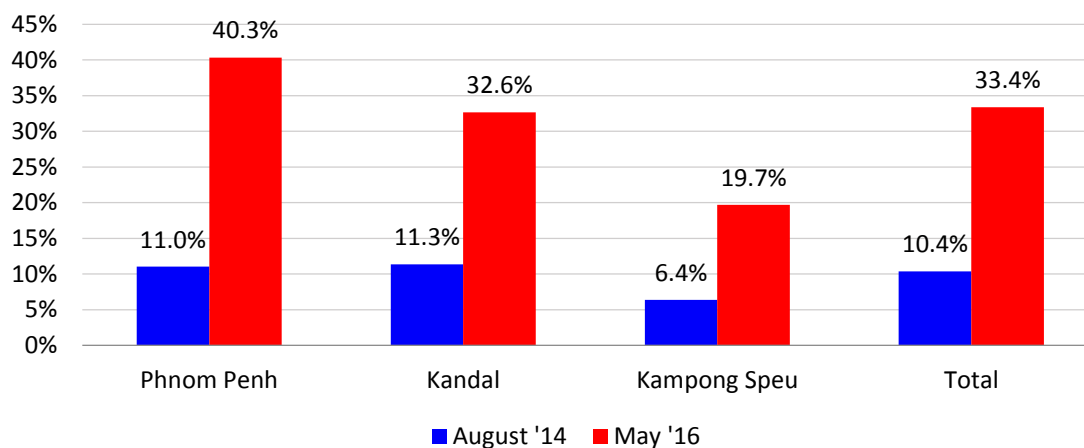
**Figure 4: Change in Driver Helmet Use Rates
Baseline to End-line**



This increase in driver helmet use in the three provinces resulted in an estimated 252 avoided casualties, translating to an additional \$2,230,073 USD saved based on the human capital methodology or \$3,026,732 USD according to a willingness to pay framework. See Annex V and Annex VI for detailed calculations.

While helmet use has also increased for children, nearly quadrupling from baseline, the improvement has been more muted and was not sustained after the public realized child helmet use had been excluded from the sub-decree related to fines and enforcement. Overall, combined adult and child passenger helmet use rates across the three target provinces increased from a baseline of 10.4% to an end-line of 33.4%. See Figure 5 below for changes in overall passenger helmet use.

**Figure 5: Change in Helmet Use Rates for Child and Adult
Passengers
Baseline to End-line**



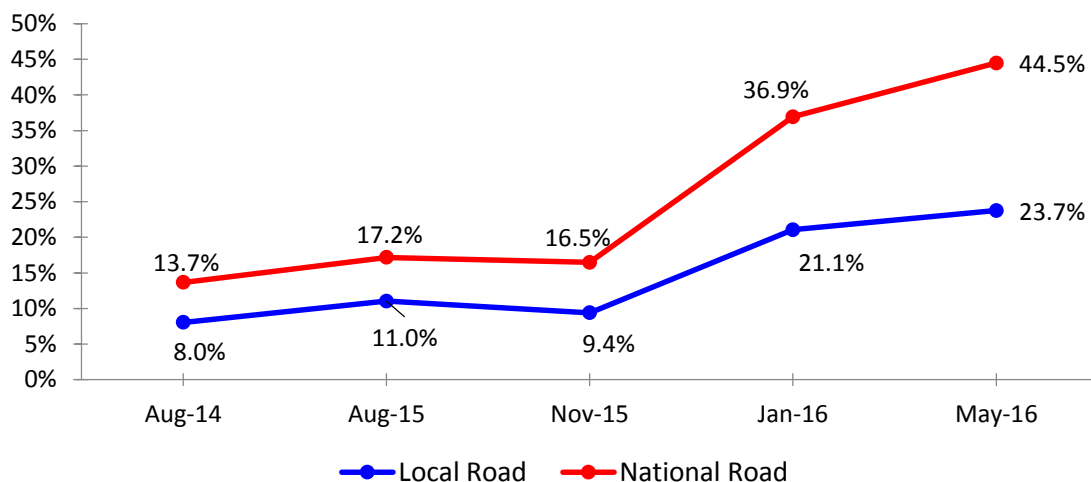
By incorporating children into the impact evaluation analysis, the increase in overall passenger helmet use would lead to 107 avoided casualties in the three provinces, translating to an additional \$947,768 USD saved based on the human capital methodology or \$1,282,428 USD according to a willingness to pay framework. See Annex VII and Annex VIII for detailed calculations.

In addition to these estimates for injuries and fatalities avoided in the three provinces overall, school-based crash monitoring found specifically that 332 children reported being involved in a bicycle or motorcycle incident while wearing a project helmet donated as part of SBP, with potentially life-saving effect. 104 of these children were passengers on motorcycles at the time of the crash.

National roads saw greater improvement

According to the RCVIS 2015 Summary Report included as Annex XII, 68% of road crashes occur on national roads. HSHO used its data to explore anecdotal evidence that enforcement activities were greater on these national roads than on local roads. The data, shown in Figure 6 below, supports this belief. National roads saw double the rate of change after the January start of enforcement than did local roads.

**Figure 6: Adult Passenger Helmet Use
Local vs. National Roads**

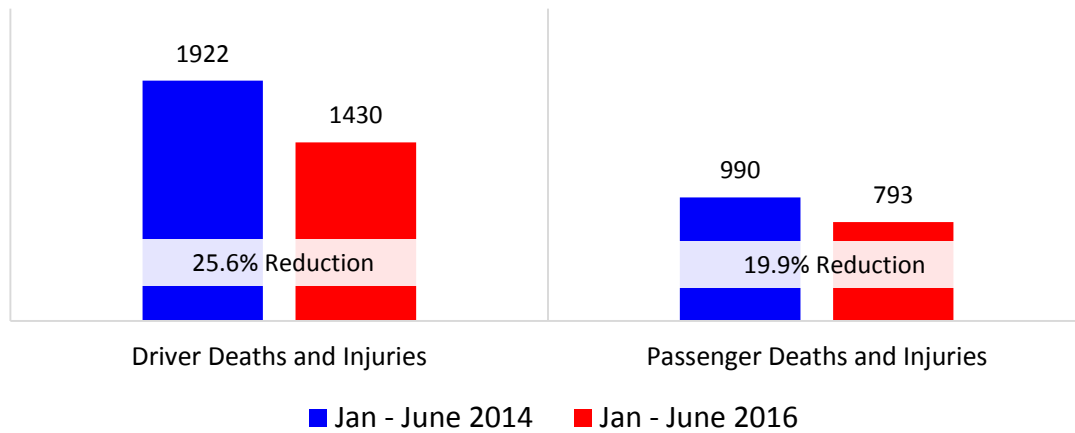


However, it is important to note that different helmet use rates may be attributable, at least in part, to different attitudes regarding the dangers posed by: national versus local roads; traveling over longer distances; reaching higher speeds; or the perception of more extensive enforcement activities held on national roads as compared to local roads. It may be worthwhile to compare rates along various national roads to look at other explanations for differences in helmet use.

Decline in non-helmeted deaths and injuries

Final per capita data on road safety injury and death rely on the official RCVIS 2016 Summary Report which combines data collected by the police and health centers, and will not be available until mid-2017. However, AIP Foundation worked with the Cambodian police to obtain national level police data to overcome this limitation. Analysis indicates a reduction in the rate of injury and fatality over time, as shown in Figure 7 below.

**Figure 7: Change in Non-Helmeted Deaths and Injuries
2014 to 2016**



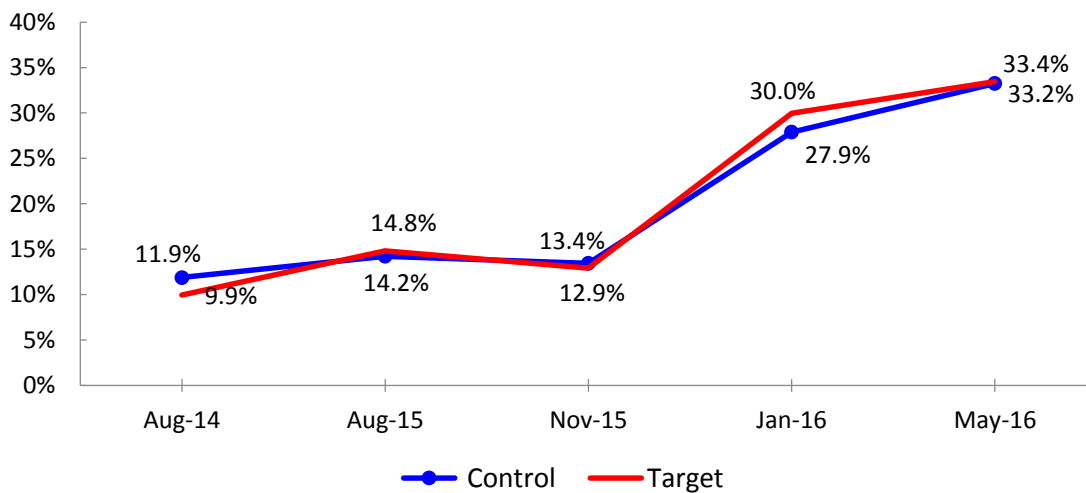
Closer Analysis of Results Including Lessons Learned and Next Steps

Analysis of changes in helmet use rates in target provinces and a comparison of target and control groups over the course of HSHO project implementation reveals the following key takeaways:

Enforcement mattered most

First and foremost, enforcement of the passenger helmet law, which began in January 2016 after a number of delays, was catalytic for increasing helmet use rates. The EEC component of HSHO heavily supported the enforcement of the passenger helmet law by assisting with the development of national and sub-national enforcement action plans for traffic police, and contributed largely to the realization of the project’s anticipated spillover effect into control communes (i.e. where no grassroots activities took place directly). See Figure 8 for the effect of January 2016 enforcement in both target and control areas.

**Figure 8: Adult and Child Passenger Helmet Use
Control vs. Target**



BCC should discontinue grassroots efforts at the commune level

As is evident based on Figure 8 above, there was negligible change to passenger helmet use rates throughout the target areas prior to the start of enforcement in January of 2016. This suggests against continuing extensive BCC grassroots efforts in the future. From an EEC perspective, it would be advisable to retain BCC's mass media campaigns, which were an effective mechanism for utilizing public expectation of pending enforcement to hold the government accountable to its voiced start date, thereby pre-empting any last minute government-initiated delays. It is also advisable to continue BCC efforts at the provincial and district levels given that these activities are less resource intensive and leverage the role of provincial and district authorities to disseminate information and oversee enforcement at a broader level. Additionally, helmet observation data from non-target provinces suggest that passenger helmet use rates have been less stable post-enforcement than the three HSHO provinces.¹¹ This suggests that provincial and district level awareness activities may contribute to lasting behavior change alongside provincial EEC efforts and should be expanded to other provinces.

SBP activities should focus on 'model' schools

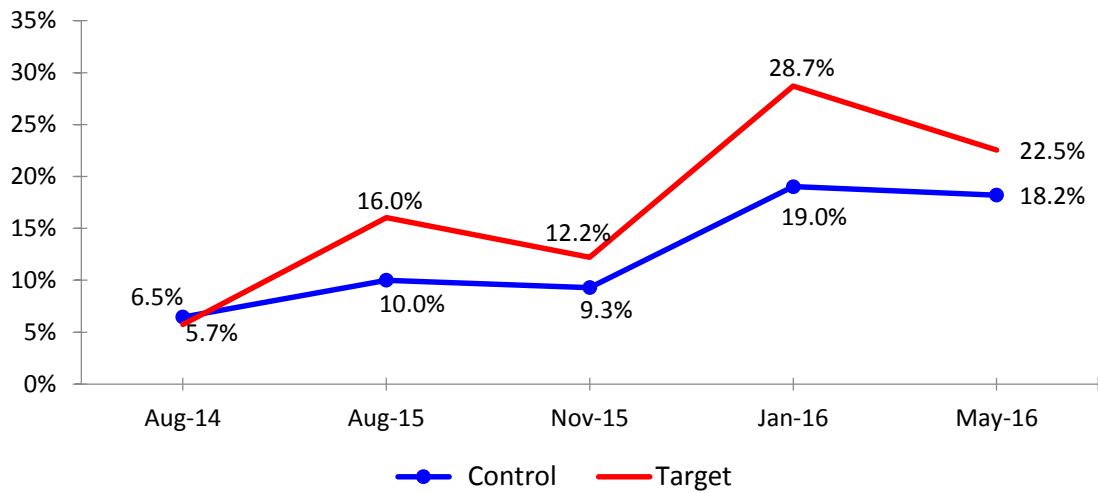
There is a significant difference between child helmet use rates in target and control communes *prior* to the start of enforcement as observed through commune-level observations, which strongly suggests that the SBP component effectively led to positive behavior changes. Please see Figure 1 above. However, SBP activities are labor and resource intensive. To continue to support helmet use in schools while recognizing cost limitations of scaling SBP activities, one school from every province could be selected to serve as a 'model' school for the province, receiving helmet donations and school-level interventions. This would allow AIP Foundation to continue to engage with relevant authorities and stakeholders while encouraging schools to contribute to child helmet use efforts by providing an example for best practices.

Components of SBP should be incorporated under EEC

With the scale down of SBP activities to 'model' schools, remaining efforts can be consolidated into the EEC component – namely, advocacy and action planning with the Ministry of Education to use school regulations as a soft enforcement mechanism nationwide. As a note, in rural and lower socio-economic areas, removing helmet donations to students through the schools may pose a hurdle to increasing child helmet use; however, this could serve as an opportunity for EEC to work with relevant government ministries to advocate for social responsibility efforts amongst private sector members, including helmet donations.

¹¹ Cambodia Helmet Vaccine Initiative 2016 Summary Report.

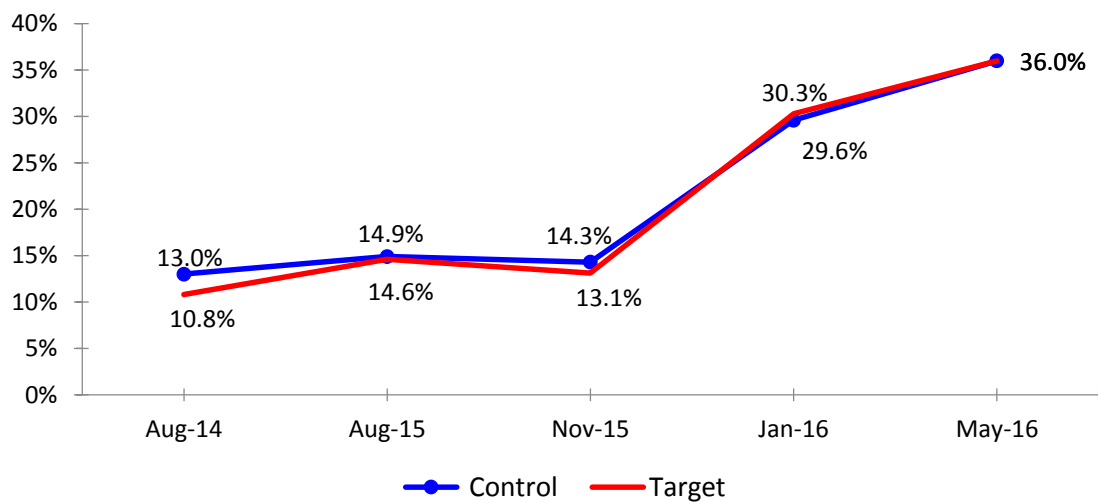
**Figure 9: Child Passenger Helmet Use
Control vs. Target**



Children must be included into enforcement of fines

A major point of concern for HSHO has been the exclusion of children from the enforcement of fines for the new passenger helmet law. While the start of enforcement in January led to an initial jump in helmet wearing rates amongst children, presumably due to the public’s assumption that fines for the new law would extend to children, there has been a subsequent decline in child helmet rates from January to May 2016, as evident in Figure 9 above. In comparison, adult passenger rates shown below in Figure 10, have increased over the same time frame.

**Figure 10: Adult Passenger Helmet Use
Control vs. Target**



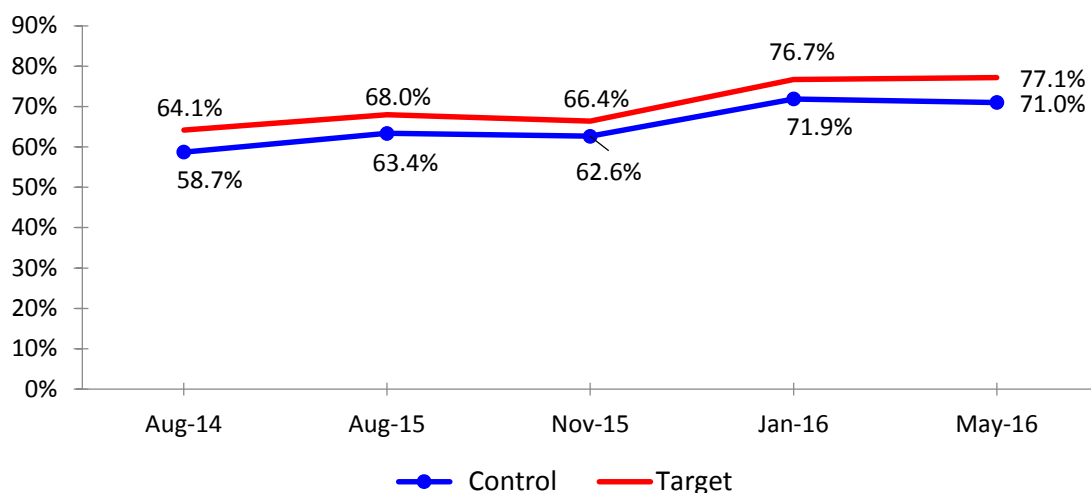
Comparison of Figures 9 and 10 between January and May 2016 thus demonstrates a strong need for continuing advocacy efforts to push for the inclusion of children into the sub-decree on fines,

supplemented by efforts to incorporate road safety into curriculum and uniform requirements in schools as well as increasing awareness of the importance of child helmet use through BCC campaigns.

Woodwork effect seen on driver helmet rates

A positive woodwork effect can be seen for driver helmet rates. See Figure 11 below. This was a reasonable expectation given that non-helmeted drivers would also incur a fine with increased enforcement efforts alongside any non-helmeted passengers. Additionally, BCC education campaigns also targeted drivers by focusing on the driver’s responsibility to protect their passengers. While the primary goal of this campaign was to increase helmet use amongst passengers, it may have served an additional purpose of raising awareness about the importance of wearing a helmet amongst drivers as well. This type of joint messaging about the importance of helmet use for all should be continued in future mass media campaigns, and moving forward there should be increased efforts to integrate drivers into activities aimed at increasing helmet use, particularly given that it can lead to substantial cost savings as discussed above. Please see Annexes V and VI for more details.

**Figure 11: Driver Helmet Use
Control vs. Target**



Unquantified impact beyond intervention areas

The HSHO program has also had unquantified impact extending beyond the three target provinces thanks to the nationwide implementation of the new passenger helmet law, as set out through EEC supported passage of the nationwide passenger helmet law and the National Enforcement Action Plan on Passenger Helmet Use. Based on the analysis discussed above, it is reasonable to assume helmet wearing rates increased in provinces throughout Cambodia as enforcement went into effect nationwide. Additionally, BCC mass media activities reached nationwide audiences, but the impact of these efforts are difficult to measure. However, research has shown that road safety mass media campaigns, when combined with other measures like enforcement, result in an average 8.5% reduction in crashes during the campaign, and after completion, crash reductions can increase to 14.8%.¹²

¹² “Approach,” CAST. *Belgian Road Safety Institute*, <http://www.brsi.be/en/road-safety/cast/approach/>

Other key achievements

A number of other impressive outcomes were achieved through the HSHO project, namely: January 2015 promulgation of the new passenger helmet law, July 2015 passage of the sub-decree on fines, and January 2016 start of enforcement of the law.

The attention raised by media, in cooperation with AIP Foundation's other projects, was also notable. Prime Minister Hun Sen was featured prominently in the news with a photograph of him and his passenger wearing a helmet. Additionally, the United States Ambassador included a direct reminder about the new passenger helmet law in his holiday video message posted on social media. The government has also recently stated to media outlets that it has called for motorcycle manufacturers to seriously consider providing a free child helmet with every motorcycle sale, indicating potential private sector collaboration. These examples signify that helmet use, especially for passengers, is becoming a new priority in the country and is finally achieving the attention necessary to address such a widespread and costly problem.

A closer look at achievements reached through advocacy efforts can be found in the separate Policy Report under this Milestone submission. Successes of each project component are also summarized in the case studies included as Annexes XIII – XV.

Lessons learned for future funders and policymakers

In the longer-term, AIP Foundation expects a steady rise in helmet wearing rates if enforcement activities, mass media campaigns, and school-based education programs are sustained. Based on the above results, HSHO issues the following recommendations to ensure continued improvement:

- For development funders, there is an urgent opportunity to include “soft” road safety components aimed at improving road user behaviors alongside infrastructure improvements as Cambodia continues to develop. Of all international development aid offered to Cambodia, by far the most goes to the transportation sector: between 2013 and 2015, \$995 million USD, or 32% of all aid the country received, went to the transportation sector. However, the majority of these projects are grants or loans for road and infrastructure development, while insufficient resources are allocated to road safety initiatives.¹³
 - Moving forward, infrastructure projects should require a portion of funding be dedicated to curbing the dangers posed by increased road development.
- The toll of road crashes continues to counteract many of the gains Cambodia is making in development – including in the health sector and with poverty reduction.
 - Impact bond case studies and models for investment can be developed to attract new networks of donors focused on evidence-based models that will curtail the losses associated with road casualties.
- There is unexplored space for greater engagement by private sector funders.
 - Corporations have the opportunity to fund helmet donations or subsidies for lower-income groups as a complement to related public sector initiatives.
 - Major companies and organizations could also require helmet use both on and off company grounds through organizational policies and staff regulations, helping spread a culture of safety outwards.

¹³ Council for Development of Cambodia

- For policy makers in Cambodia, it must be a priority to include children into “mainstream” helmet use.
 - This can be through both enforcement efforts and inclusion of children into the sub-decree on fines, as well as through the incorporation of helmet use in school curriculum and uniforms nationwide.
- Helmet quality is a major issue in Cambodia. Although a Cambodian helmet quality standard was set through legislation passed in 2010, large numbers of helmets on the market are of sub-standard quality, which means they offer poor protection and may even shatter on impact, worsening injuries during a crash.
 - As there are no helmet test centers in Cambodia, there is an opportunity for public and private sector collaboration to provide funding for the construction and operation of these centers.

Key staff attributes

The sharp, on-the-ground knowledge amongst the staff of the road safety situation in the country was key to establishing the credibility necessary to engage with stakeholders. As a caution for scaling, it may be difficult to effectively implement this model in countries where an existing NGO or team does not already have strong contextual understanding and established working relationships with relevant stakeholders. See discussion in Stakeholder Engagement above.

Cost-effectiveness & Competitive Landscape

Cost-Effectiveness

USAID-DIV invested \$635,993 USD in the HSHO program, which has realized the below cost-savings in the three target provinces:

Table 2: Realized Cost Savings

<i>Increase in Helmet Use Among:</i>	<i>Methodology</i>	<i>Cost Savings (USD)</i>	<i>Savings per Dollar Invested (USD)</i>
Adult Passengers + Drivers	Human Capital	\$3,089,316	\$4.86
Adult Passengers + Drivers	Willingness to Pay	\$4,309,159	\$6.78
Adult Passengers	Human Capital	\$859,243	\$1.35
Adult Passengers	Willingness to Pay	\$1,166,194	\$1.83
Drivers	Human Capital	\$2,230,073	\$3.51
Drivers	Willingness to Pay	\$3,026,732	\$4.76
Adult + Child Passengers	Human Capital	\$947,768	\$1.49
Adult + Child Passengers	Willingness to Pay	\$1,286,343	\$2.02

Please refer to Annexes III – VIII for additional details of the cost savings calculations.

It is important to note again that this underestimates the true cost savings realized through the HSHO project. Given that there were negligible differences between increased helmet use amongst adult passengers and drivers in the target and control communes throughout the three target provinces, likely due to the nationwide impact of passenger helmet law enforcement initiated with EEC support, it is reasonable to assume that the remaining twenty-two provinces experienced similar increases. As such, the avoided casualties and associated losses are likely substantially higher.

Competitive Landscape

As is clear through the above analysis of the two-year HSHO program, helmets provide a quick and cost-effective solution to reducing injuries and fatalities. Other strategies or interventions, such as long-term projects aimed at infrastructure, public transportation, or post-crash care upgrades, are important measures to improving the road safety landscape in Cambodia alongside efforts to increase helmet use; however, these measures may be difficult to implement quickly and at low cost – allowing for lives to be lost on the roads every day in the interim.

Additionally, helmet use is more effective than alternatives at preventing road casualties; for example, research indicates that while enforcement of a drink-driving law can reduce the number of road deaths by 20%,¹⁴ helmet use reduces the number of deaths by 42%¹⁵ – leading to significant improvement in outcomes and avoided losses.

The HSHO project is also on par with other public health issues in terms of cost-savings provided by every dollar invested. According to some analyses, every dollar invested in controlling malaria in Africa provides a five-dollar gain.¹⁶ Similarly, research into HIV prevention programs in Canada estimated that each dollar invested in these programs and services saved five dollars in future costs.¹⁷ The cost savings attributable to the combined increase in driver and passenger helmet use resulting from the HSHO project is in line with these other interventions. Given that the presented cost savings for the HSHO project ignore increases to helmet use in the twenty-two provinces benefiting from national activities, it is likely that the true comparison would reveal the HSHO intervention to be even more favorable.

Project Improvement and Scaling Plan

At the start of the project, the AIP Foundation team imagined that HSHO would scale-up through the public sector, maintaining and expanding all three components of the program while recognizing that the amount of funds allocated to helmet donations or subsidies should decrease. Based on experiences implementing the program over the past two-years, AIP Foundation suggests a revision of the current components to best scale the program in the next three to five years:

- Due to the woodwork effect seen for drivers, scale-up should involve coordinated efforts to increase helmet use for both drivers and passengers at once, now that passengers are equally included in the law.
- Results indicate clearly that support for enforcement through EEC efforts was most effective at increasing helmet use rates, and its advocacy and capacity building activities should be intensified at both national and sub-national levels. As Cambodia's economy continues to grow

¹⁴ "Global Status Report on Road Safety 2015," World Health Organization.

¹⁵ Liu, Bette C, Rebecca Ivers, Robyn Norton, Soufiane Boufous, Stephanie Blows, and Sing Kai Lo. "Helmets for Preventing Injury in Motorcycle Riders." In *Cochrane Database of Systematic Reviews*, edited by The Cochrane Collaboration and Bette C Liu. Chichester, UK: John Wiley & Sons, Ltd, 2008.

¹⁶ "Costs and Benefits of Investment in Malaria Control, Elimination, and R&D," *Global Malaria Action Plan for a malaria-free world*, <http://www.rollbackmalaria.org/microsites/gmap/2-5.html>

¹⁷ "Study finds large savings from investment in community-based HIV prevention programs," *CATIE*, 8 July 2015, <http://www.catie.ca/en/catienews/2015-07-08/study-finds-large-savings-investment-community-based-hiv-prevention-programs>

alongside much of the region, more people will acquire motorcycles or other motorized vehicles, which will only worsen the already chaotic situation.

- It will be essential to improve the capacity and planning capabilities of traffic police and other relevant stakeholders in preparation for these changes.
- EEC efforts should continue to focus on enforcement of both driver and passenger helmet use nationwide through the development of provincial level action plans, given that helmet use rates in non-HSHO target provinces such as Siem Reap have been much less stable since the start of enforcement in January 2016.¹⁸
- For Cambodia, focus should be placed on advocating to include children into the sub-decree on enforcement of fines as well as on increasing stringent enforcement of the law nationwide through development of sub-national level action plans.
- SBP components should be scaled to one ‘model’ school in every province to serve as an example for others while still allowing AIP Foundation to maintain contact with key administrators to support broader child helmet use efforts.
- EEC should be expanded to include aspects of SBP’s focus on child helmet use. There is currently an Education Action Plan for schools that has been finalized by a technical working group, which would require that schools conduct awareness activities for students and parents and also host regular road safety education activities including annual helmet use events and weekly road safety reminders. EEC should advocate the MoEYS to approve and implement the action plan and other curricular reforms as soft enforcement mechanisms.
- EEC advocacy efforts should be bolstered by BCC mass media campaigns via both television and radio channels to maintain and improve public awareness nationwide.
- BCC grassroots activities at the commune level should be discontinued, as they did not lead to dramatically improved behaviors. However, BCC activities at the provincial and district levels should be maintained to support post-enforcement passenger helmet use rates across non-HSHO target provinces.
- Based on experiences with monitoring and evaluation in HSHO, there are a number of changes that could be implemented during a scale-up of activities.
 - Scaling nationwide removes the need for controls, which overcomes the issue of the impurity of control groups in HSHO but poses challenges for cost-effective monitoring.
 - There can be improved variable selection to isolate key factors that may influence helmet use, which would help determine the impact of those factors. Some examples of comparisons that could be drawn through the street-based observations include comparing helmet use rates at night and during the day, as well as along roads with or without enforcement checkpoints.

HSHO intervention areas can be monitored as a separate group to examine the longer-term effects of the two-year project. Continued monitoring will also identify whether the improved knowledge, attitudes, and behavior attributed to BCC activities translates to higher helmet wearing rates in the long-term, given that behavior change requires time.

While much of the above discussion focuses on how lessons learned from the HSHO project over the past two-years can guide the scaling process in Cambodia, the key takeaways and lessons learned from

¹⁸ Cambodia Helmet Vaccine Initiative 2016 Summary Report.

HSHO may be generalized to other country contexts where: motorcyclists comprise a high percentage of road fatalities and injuries; there is a need to fill gaps in legislation, policy, or enforcement, including issues with coordination of government bodies; and helmet interventions are more viable than costly infrastructure renovations in the short to mid-term time frame, particularly in rapidly developing, low- to middle-income countries.

AIP Foundation hopes to apply this refined version at scale in the next three to five years in Cambodia as well as in other countries facing similar challenges – particularly to support the Post-2015 Sustainable Development Goals (SDGs), which include a target to reduce road deaths by half by 2020. To achieve this target in Cambodia, it has been calculated that helmet use must be increased to prevent head injuries and the loss of 3,950 lives by 2020.¹⁹ In preparation for this endeavor, AIP Foundation has secured funding from numerous partners including the FIA Foundation and The UPS Foundation. The US CDC has also committed to providing technical support. However, these partners will be unable to provide adequate funding and resources for implementation of all the necessary activities at national or multinational scale, so supplementary funding sources will be necessary for continued efforts.

With the additional years spent building government capacity and developing handoff strategies during a three to five year scale up period, AIP Foundation believes that many elements of the refined project can be sustained through public sector channels in the subsequent years. The Cambodian government has shown commitment to addressing the crisis on the roads, providing nearly half of the funds – almost \$3 million USD – to deliver the NRSC’s National Road Safety Action Plan and in 2016, additional government funding is enabling the purchase of new equipment to support enhanced enforcement activity. In May 2016, the government announced that they are also considering allocating funding to support initiatives from the Provincial Road Safety Committee starting in either 2017 or 2018.

AIP Foundation has identified a number of government stakeholders that could incorporate aspects of the refined HSHO model into their responsibilities after completion of a three to five year scaling process:

Table 3: Stakeholder Roles in Scale-Up

<i>Stakeholder</i>	<i>Activities</i>
National Road Safety Committee	Increase prioritization of addressing road safety risks, as has already been seen based on the staff members assigned to the NRSC. Require and enforce government staff helmet use. Increase funding for road safety and distribute funds to each provincial road safety committee. Responsible for coordinating the support and engagement from public and private sector on road safety issues.
Department of Traffic Police and Public Order, National Police, Ministry of Interior	Strengthen their enforcement of non-helmeted motorcyclists including non-helmeted child passengers based on capacity building efforts made during the 3–5 year scale-up with AIP Foundation support.

¹⁹ Calculation conducted by Handicap International and the Institute for Road Safety Research (SWOV), The Netherlands, 2010

Ministry of Education, Youth, and Sport (MoEYS)	Responsible for the renewal of the National Action Plan to promote helmet use among students and educators by continuing to require that all schools, including private schools, implement and update road safety curriculum and incorporate helmet use as part of the school uniform.
Ministry of Information	Continue to promote BCC media campaign activities by distributing road safety messages nationwide primarily through state media channels.
District Road Safety Working Groups	Take the lead with developing district-level helmet action plans and ensuring road safety messages can be effectively distributed to local community. Ensure sustainability of action plan implementation by identifying funding sources ongoing efforts.

Annexes

- Annex I: Monitoring and Evaluation Framework
- Annex II: Indicator Reference Sheet
- Annex III: Cost Savings from Increased Adult Passenger Helmet Use Using Human Capital Methodology
- Annex IV: Cost Savings from Increased Adult Passenger Helmet Use Using Willingness to Pay Methodology
- Annex V: Cost Savings from Increased Driver Helmet Use Using Human Capital Methodology
- Annex VI: Cost Savings from Increased Passenger Helmet Use Using Human Capital Methodology
- Annex VII: Cost Savings from Increased Passenger Helmet Use Using Human Capital Methodology
- Annex VIII: Cost Savings from Increased Passenger Helmet Use Using Willingness to Pay Methodology
- Annex IX: Behavior Change Communications End-line Study Topline Report – May 2016
- Annex X: Behavior Change Communications End-line Evaluation Report
- Annex XI: Helmet Observations across Three Target Provinces
- Annex XII: RCVIS 2015 Summary Report
- Annex XIII: School-Based Program Case Study
- Annex XIV: Behavior Change Communications Case Study
- Annex XV: Enabling Environment Change Case Study
- Annex XVI: Feedback to USAID-DIV
- Annex XVII: *Head Safe. Helmet On.* Infographic