The Road Crash Prevention and Reduction Network of Surin Province

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Road Crash Situation in Surin Province

Based on road crash databases of three sources (police, public health, and Road Accident Victims Protection Co., Ltd. – Surin Branch), 364 people were killed in the road crashes in 2014. This number shows road casualties at a rate of 26 people per 100,000population whereby the majority are teens and young adults. These population groups exhibit risk behaviors such as drink driving, speeding, and not wearing helmets when riding a motorcycle. Though, Surin Province has been working on road safety issues through an integrated working approach since 2004 it has been reported that *"road crash reduction work has long been dealt with for a long time, but we become accustomed to old working process and same old policy every year". Thus, when come down to local road safety activity, we just do for the sake of getting it done to get it out of the way, so road safety issues in our country are showing no sign of reduction. Moreover, road crash data for the past few years has clearly indicated that drink driving has become the main cause of crashes, therefore, in order to tackle road crash problems effectively we have to solve this drink driving behavior as well"*.

Road safety work is mobilized in Surin Province at 3 levels as follows;

1. Provincial road safety by Surin Road Safety Directing Center
2. District Road Safety Directing Center
3. Sub-district Road Safety Directing Center

Since 2015, different organizations from different sectors that cover the government, private and public sectors have been integrating their work, which has diversified their way of viewing and dealing with problem and issues. This kind of working approach is very useful for seeing problems from a different perspective whilst all work towards the same goal of "creating happy and pleasant society for people of Surin Province". Moreover, by having a small working team it has allowed more flexibility to adjust to any changes in situation that may affect the current work, for example, there may be an urgent road safety issue that requires immediate attention and action, to which the team can react quickly through horizontal communication and coordination to mobilize budget and resources as needed.

Fortunately Surin Province has received adequate budget support from various organizations such as Department of Disaster Prevention and Mitigation, Thai Health Promotion Foundation, Thailand Road Safety Network, Road Safety Directing Center, and Stop Drink Network.

The work uses a horizontal working approach with provincial working groups assisting in moving work forward. The mobilization process is shown below;

1) Surin provincial road safety network

Under the Surin Road Safety Directing Center, there is a subcommittee consisting of a representative from Provincial Police, Provincial Public Health Office, Surin Hospital, Surin Social Security Office, Provincial Administrative Organization, Surin Highway District, Surin Rural Highway District, Provincial Land Transport Office, Surin Provincial Relations Office, Surin Provincial Radio Thailand, Surin Primary Educational Service Area Office 1,SurindraRajabhat University, Surin Town Municipality, Mueang Surin District Police, Happy Surin Project, and Provincial Disaster Prevention and Mitigation Office. The role of the subcommittee is to operate as a core-team to monitor road safety situations and communicate the information via a group chat Line Application, for which there are a total of 103 members. Five road safety working processes are also applied to help mobilize road safety work at district and sub-district levels. The heart of the coordination lies within the fact that all team members' roles and responsibilities are related to road safety issues, so all work under this road safety group is an extension of carrying out their duties, but in less formal setting and more proactive. This mechanism has given the team a more flexible working structure, horizontal working relationship without giving instruction to one another, but rather an exchange of views and information.

2) Information development system and knowledge management

This involves the management of road crash data being collected by three different agencies whereby information is systematically collected and used for different locations. The manner of data and information is collection management, and utilization is as follows;

1. Conducting a lesson learned session with the network of local administrative organization and other relevant agencies at district level before summarizing into a data set for others to use in the future.
2. Conducting a site visit to provide advice to the District Road Safety Directing Center.
3. Conducting a risk spot site investigation and collection of all road crash data from different areas as well as gathering recommendations from local agencies before presenting it to the provincial working group through the Line chat group.

Outcomes

Following the project evaluation by the provincial core team on District Road Safety Directing Center, the result showed that there is a clear road safety working mechanism in Sangkha District, Chom Phra District, Prasat District, Si Narong District, and Buachet District. Each district has a pilot sub-district road safety team, for example, in the case of Sangkha District Road Safety Directing Center, there is a multi-disciplinary team that drives road safety work at the sub-district level. The key agencies are District Office, Assistant District Chief of the Security Affairs Group, District Land Transport Office, District Public Health Office, District Hospital, Sub-district municipality, Electricity Authority, Emergency Rescue Unit. The subcommittee of Sangkha Road Safety Directing Center is supported technically through a meeting at district level, which acts as a reinforcing team for Sub-district Road Safety Directing Center.

Successful lesson

Surin Provincial Road Safety Directing Center is a mechanism being driven by a multi-disciplinary road safety network. A similar mechanism is then expanded into district level, which has provided all people involved to learn from real experience, and enable others to apply their successful outcomes elsewhere. This working process is admirable since it has given all working level team members a sense of pride and morality to continue doing a good job. Many of these teams have led successful community road safety and become good pilot models. For example, Samphao Lun Sub-district Model from Buachet District, conducted road safety works to address the drink driving issue. Prasat District Model, which carried out community check-points. Chom Phra District, Sangkha District, and Si Narong District carried out school road safety projects with outstanding work at Weerawatyothin School in executing 100% helmet wearing measures and using the QR coding system to collect data on motorcycle license plates and helmets. Moreover, 68 primary schools in Sangkha District had integrated road

safety curriculum into school learning. Another good road safety model is also seen in private organizations such as HbI Manufacturing Co., Ltd. and Surin Sugar, which led a 100% helmet wearing measure in their companies as suggested by the province whilst being constantly monitored by the provincial subcommittee team. Other work involved the declaration of road safety as a provincial agenda. The public campaign was led by Mr. Adthaporn Singhawichai. The Governor of Surin Province, Mr. Sinpetch Kruaythong, the Olympic Athlete, and Ja Panom, the actor.

Following an evaluation of the project

All relevant agencies and organizations became aware of the road safety situation and cooperated to continue working on finding and carrying out work on resolutions. Seven monthly meeting of the Provincial Road Safety Directing Center were held in 2016. At this meeting, the district team's work was presented where the district team was supported by the mentor who was appointed for each of all 17 districts.

Obstacles

Some of the districts have made no move on mobilizing the District Road Safety Directing Center mechanism. All they have done is conduct road safety promotion activities during public holidays due to the lack of a coordinator or members of the team treating tasks as an extra work being added to their regular job responsibility. Additionally, some people still do not realize the importance of the issue and believe that a road crashes are is normal.

Recommendations

It is recommended to have the Provincial Disaster Prevention and Mitigation Office coordinate the integration of information and communication with other network members. In addition, in order to retain mobility, an individual should be clearly assigned the job responsibility as well as having roles in following up project work from those in community, district, and provincial level.

The district road safety mechanism must be continued and the provincial team of mentors has to follow up and visit the area continuously.

Key to success

The key is the senior executive's leadership and support with clear policy and constant follow up from both provincial and district level. As for the working mechanism, the key to success lies within the team cooperation whereby all members are truly dedicated

and take the work seriously. Moreover, by receiving a compliment from the senior executive at the provincial meeting each month, and having a chance to present their work in regional and national level it has given the local road safety team's overdue recognition and appreciation boosting their morale.

The Multi-disciplinary Team's Capability of Surin Provincial Road Safety Directing Center

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Road safety work in Surin Province is operated under a multi-disciplinary team of representatives from relevant organizations in government, private, and civil sectors. They are consisting of StopDrink Network – Lower Isan Region, Happy Surin Community, Surin Provincial Police, Provincial Public Health Office, Provincial Land Transport Office, Provincial Disaster Prevention and Mitigation Office, Surin Highway District, Surin Rural Highway District, Surin Hospital, Surin Radio Thailand, Surin Social Security Office, Provincial Education Office, Surin Vocational Collage, Surindra Rajabhat University, Surin Probation Office, Provincial Local Administration Office, and Road Accident Victims Protection Co., Ltd. (RVP) – Surin Branch. The multi-disciplinary team is serves as a subcommittee to Surin Road Safety Directing Center, which is the main mechanism that helps drive road safety activities where local relevant agencies and leaders from both district and sub-district levels have also joined the committee to deliver road safety projects in a community level. All team members' roles and responsibilities relate to road safety issues, so all the road safety work being carried out is basically part of their duties, but in less formal setting and more proactive.

This mechanism has given the team a more flexible working structure, horizontal working relationship without giving instruction to one another, but rather an exchange of views and information. Road crash data and related information is compiled and presented to the provincial committee by the Provincial Disaster Prevention and Mitigation Office who is a secretariat to the center. This has given a good opportunity to the working team to gain acceptance and present their recommendations whilst hearing suggestions from the provincial road safety working body as well.


Source: Surin road crash prevention and reduction working group committee meeting, 2014

At the same time, Surin Province had been attempting to develop the same mechanism of Road Safety Directing Center at the district level since 2010 when Pol. Maj. Gen. Mr. Ronnapong Saikeaw, Commander of Surin Provincial Police, was Chairman of the Road Safety Directing Center Committee and Mr. Amnuay Juntarat, Chief of Provincial Disaster Prevention and Mitigation Office, as Committee Secretariat. In 2007, the working group committee received budget support of 100,000Baht annually from the Thailand Road Safety Network, which is ongoing. The work was focused on Road Number 24 in Prasat District to establish learning the working process among local administrative organizations situated nearby the road, and to become part of the road safety mobilization mechanism of the District Road Safety Directing Center beginning on Songkran Holiday in 2012 and continuing.. The lessons learned were summarized and turned into a provincial road safety policy and then expanded to other areas in Surin Province. In addition, the province has also received budget support from Thai Health Promotion Foundation to develop the multi-disciplinary team capacity building for the District Road Safety Directing Center in 2014 to mobilize road safety work at the district and provincial levels under the Thailand Road Safety Network support framework.

The development of a multi-disciplinary team capacity building for District Road Safety Directing Center in 2014 was aimed to enhance road crash prevention and reduction work in Surin Province through District Road Safety Directing Center in all 17 Districts to effectively mobilize road safety work in local communities. When looking at road crash statistics during New Year and Songkran Holidays in 2014, it showed a reduction of 30% compared to the same period the previous year.

After one year of project implementation, it was found that there are five districts that are able to establish a multi-disciplinary team which can actually continue to effectively reduce road crashes. These included Prasat District, Sangkha District, Sanom District, Buachet District, and Chom Phra District, collectively they comprised 30% of the total 17 districts, which is lower than the target of 70%. The overall road crash reduction statistic for Surin showed a reduction of crashes by 26.30% compared to the target of 30%.

Good road safety work at the community level, shows several good example of the community road safety model during 2014-2015, these are Samphao Lun Sub-district in Buachet District, Chokdee Community in Village Number 1 of Ta Bao Sub-district in Prasat District, all communities in Sangkha District and Sanom District, Ko Kaeo Sub-district in Samrong Thap District, Salakdai Sub-district in Mueang Surin District.

The road safety work involved community check-points to stop a group of road users with risky behaviors such as drink driving, speeding, and non-helmet wearing from leaving community roads, which were conducted by local multi-disciplinary teams.

The main components of a community check-point are sub-district administrative organization, Sub-district Headman, Village Headman, Sub-district Health Promoting Hospital, Civil Defense Volunteers, Public Health Volunteers, Village Security Team, and local respectable community members such as elders, teachers, and other groups of volunteers.

After the project implementation, the Provincial Disaster Prevention and Mitigation Office has conducted a follow up and assessment on District Road Safety Directing Center's work being implemented by multi-disciplinary team acting as a change agent that drives road safety work into local administrative road safety directing center localities. Based on the use of crash data analysis and information management knowledge is shared across the team members.

Key to success

1. Heads of organizations take the issue seriously and given importance to the matter.
2. Clearly assign responsible person to the work and everyone in the organization to give cooperation.
3. Constantly conducting supportive activities both vertically and horizontally.

Chaiyaphom Takes Pride in 100% Helmet Wearing

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Chaiyaphum Provincial Disaster Prevention and Mitigation Office
Mr. Chotiwong Tamadi
Chaiyaphum Provincial Land Transport Office

Background and Rationale

Chaiyaphum Province is the 7th largest province in the country, and the majority of its population works in agricultural sector. The province is remains a rural society where the main transport type is the motorcycle. However, the Chaiyaphum riders' helmet wearing behavior is found to be one of the top 10 lowest rates in the country as surveyed by Thai Roads Foundation. The helmet wearing rate is 26%. There were 43 casualties in 2014 and that increased to 98 in 2015, which represents a 128% increase in just one year. This occurred despite a number of attempts by relevant road safety agencies and network partners to promote road safety awareness in the province. For example, the law is strongly enforced, public information is widely distributed, road safety knowledge is provided at school and to college students, community road safety education is conducted, road safety promotion programmed is aired via radio and the LED Advertisement Monitor, and promotional signs are installed across town almost on every corner of the road. However, it has yielded no impact on riders' behavior as they take no notice of road safety issues. Obstacles are also faced by the working group members ranging from the policy maker level, lack of budget support, lack of motivation for riders to change their behaviors, which sometimes led to tension among other partner agencies. Thus, the team decided to turn to religion to use its principles in parallel to law enforcement and public information on good road safety practices.

Working process

1. Five road safety working processes were carried out by the multi-disciplinary team consisting of Provincial Disaster Prevention and Mitigation Office, Provincial Police, Provincial Land Transport Office, Provincial Public Health Office, Local Administrative Organization, Municipality, Chaiyaphum Rural Highway District, Chaiyaphum Highway District, and Road Accident Victims Protection Co., Ltd. (RVP) – Chaiyaphum Branch.

2. The working group's mandate is to push road safety work into real practice by responsible agencies, for example, the Traffic Police from Provincial Police has established a patrol programmed as follows;
   - Conducting check-points on roads and community areas.
   - Randomly patrol on different community locations and areas where there are high numbers of motorcycle riders.

   Law enforcement is divided into two approaches;

   First approach is public information

   1) Installing advertising signage to introduce and invite the public to be aware and welcome the project work as well as conducting knowledge training in schools and colleges.
   2) Invited the Venerable Ajarn Pintoo Mahapanyo, the Buddhist monk who is well regarded and widely accepted by the general public from all sectors, to give preaching in schools and check-points. The Venerable Ajarn Pintoo led projects called "Following good Dharma brings good lives", and "Wear Sinh not Shorts on Buddhist Lent Day", which is famously and successfully changing people's behaviors of Chaiyaphum Province. The preaching was centered around helmet wearing, whereby those offenders who are being stopped at check-points have to listen to the preaching which is then followed by a warning being issued by the police as well as having their name recorded before being released. The Venerable Ajarn Pintoo has also suggested to conduct an activity called "alms for helmets" at shopping malls, community areas, and villages in every district and contribute all donations towards RVP's helmet purchase budget to buy more helmets at a low price to be further used in helmet wearing activities.

   Second approach is strict law enforcement

   Responsible police officers allocated teams to patrol the area everyday where arrests are made of those who fail to comply with helmet wearing law. In addition fines are issued strictly and continuously.

3. Introduced the change agent who has reached remarkable achievements, being well known, and respected by the general public, to assist in making a difference to the local society.

- Presented 100% helmet wearing approach to both provincial and local road safety committee meetings. Where the commanding position of the policy making level has elevated road safety issues to the provincial agenda, which resulted in an official instruction to appoint a working group and permission to cooperate with Venerable Ajarn Pintoo Mahapanyo to participate in the project.

4. Project work is covered in every area and continuously.
   - The project was firstly implemented in Mueang Chaiyaphum District to guide others on the working process before expanding it into all districts through law enforcement bodies such as local police stations with support from a group of monks from Venerable Ajarn Pintoo Mahapanyo to occasionally attend the activities as appropriate.
5. Establish the media network to present photographs from local area work to promote positive image of the project.
   - The Governor of Chaiyaphum Province conducted an event to meet with the press to present the provincial road safety policy and introduce the project to wider public acknowledgement on 100% helmet wearing. This is supported by Dharma teaching from Venerable Ajarn Pintoo Mahapanyo, which was publicly telecasted through various media such as TV programmed, newspaper, and radio programmed. This has become well known in the country.

Outcomes, benefits, and key to success

The project has attracted people's interest since they had never seen a monk asking for helmets as their alms in order to help people become safer. People who are parents started to realize the importance of the issue and started seeing change in their behaviors where more than 70% of motorcycle riders are wearing helmets. This has now become a habit and has made it easier for police to carry out law enforcement.

Lesson learned

Dharma teaching can lead to behavioral change in humans, and is able to create belief and faith in road safety.

Venerable Ajarn Pintoo Mahapanyo and Vice- Governor chairing the meeting

Venerable Ajarn Pintoo asked for helmets as alms at the shopping mall

Power of Road Safety Network to Reduce Road Crashes in Maha Sarakham Province

Pol. Lt. Col. Jaturong Mahitthichot
Meang Mai District Police, Khon Kaen Province

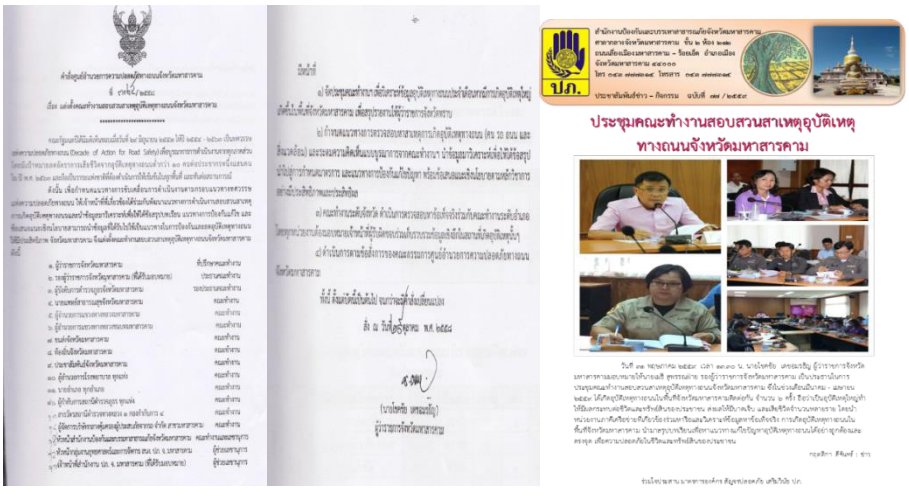
Maha Sarakham Province is a renowned educational destination with 2 universities, 1 Institute of Physical Education, 6 Vocational Colleges, 35 Secondary Schools, 3 Educational Service Area Offices with almost 100 affiliate schools. The province is subdivided into 13 districts with the total population of 964,363 and around 20,000 additional latent population who are attending schools and work. The province is situated in the heart of the Northeastern Region covering an area of 5,300 square kilometers. The province is also en route to other provinces such as Kalasin, Roi Et, Khon Kaen and Buri Ram. This has resulted in frequent crashes as seen in 2014 where there were 288 crashes, 286 people were injured, and 175 were killed.

With budget support from Thai Health Promotion Foundation together with Thailand Road Safety Network the province has developed a network aimed at road crash prevention and reduction with a focus on Maha Sarakham Province. The project commenced in 2016, which saw the Road Safety Directing Center for provincial, district, and local community levels established to deliver road safety work.

The Road Safety Directing Center Committee members were appointed by the Provincial Governor who is also a director to the center and Provincial Disaster Prevention and Mitigation Office is a secretariat to the center. The committee members consist of Provincial Police, Provincial Public Health Medical Physician, Director of Highway District, Director of Rural Highway District, Director of Provincial Land Transport Office, Director of Maha Sarakham Hospital, Director of Srimahasarakham Nursing College, all District Chief, and Superintendents from all police stations. A meeting is carried out each month to review road crash data and information from each district including major crashes. This information is presented to the provincial committee where the Governor issues an instruction for relevant counter measures to be carried out immediately..

All information and data produced by those working in the area has begun from a few individuals who form an informal network partnership, which is led by Pol. Col. Kittipat Sookka, Deputy Commander of Provincial Police, Mr. Khathawoot Moonsombut , Finance and Accounting Officer (Experienced Level) of Provincial Disaster Prevention and Mitigation Office,

Mrs. Shirimard Prasood , Road Accident Victims Protection Co., Ltd. (RVP) – Maha Sarakham Branch Manager, Mrs. Kedsirin Chailab, Public Health Officer, Mr. Thepparrit Shakrit , Provincial Land Transport Officer. Road safety networking is expanded horizontally to cover all relevant agencies, which has further extended to the establishment of provincial road crash investigation team. This is led by Vice-Governor as Chairman, Provincial Police Commander as Vice-Chairman, and Provincial Public Health Medical Physician, Director of Highway District, Director of Rural Highway District, Director of Provincial Land Transport Office, local administrative organizations, Directors of all hospitals, Provincial Public Relations Office, all District Chief, and Superintendents from all police stations as committee. The road crash investigation team is responsible for establishing guidelines to determine the cause, and preventive measures, providing recommendations on policies in accordance to road safety principles, including working together with the district committee to conduct an in-depth investigation and data collection at the crash site.



In addition, a new way of communication via Line Application chat group is used and the group is called Maha Sarakham Road Crash Center where members are Provincial Road Safety Directing Center Committee, all District Chief, Superintendents of all police stations, Manager of RVP – Maha Sarakham Branch, all emergency rescue teams, and field operations

personal from all agencies. Information such as photographs of crash scene at the time of crash is sent to all chat group members for immediate consideration, which includes instruction from the Governor for correcting problems to alleviate repeated incidents that may occur. Moreover, other agencies such as the RVP Manager would be able to quickly check for insurance policy of the vehicle involved in the crash for immediate compensation payment process. By having the incident reported via chat group has enabled all parties particularly the senior management to be aware of risk spots and any necessary action can that can be taken quickly.

Based on the information presented by the road safety network, the Governor has approved the project to strengthen traffic discipline of Maha Sarakham road users, which is conducted in all 13 districts. They are further divided into 3 groups; Group 1 is consisting of Borabue, Wapi Pathum, Kae Dam, and Kut Rang District where training is conducted in Borabue District. Group 2 is consisting of Phayakkhaphum Phisai, Na Dun, Yang Sisurat, and Na Chueak District where training is conducted in Phayakkhaphum Phisai District. Group 3 is consisting of Kosum Phisai, Mueang Maha Sarakham, Kantharawichai, Chiang Yuen, and Chuen Chom District where training is conducted in Kosum Phisai District. Each training session is provided for 160 trainees and is conducted three times. Trainees are heads of district agencies and organizations including local administrative organizations, working teams, representatives from local communities, schools, and colleges. Training involved community road safety action planning. A process is used to initiate local participation that works from the bottom up as well as horizontal coordination. In the end, three road safety action plans from three district groups have been formed.

In summary, the budget support from Thailand Road Safety Network given to the province to develop a network of road crash prevention and reduction has been well spent since it has achieved its objectives. A network has been formed and communication among members is constantly made while monthly meetings continue to take place. It has given birth to a provincial road crash investigation team, whereby a meeting can immediately be called upon for important crash cases. Moreover, a new communication technology is used to improve communication and assist in road safety work such as risk spot treatment. All

work has led to budgets being allocated to support road safety project plans which arise from the local levels Road crashes in Maha Sarakham Province have also declined continuously as indicated in the below table where road crash statistics from 2014 – 2016 is shown.

ศูนย์อำนวยการความปลอดภัยทางถนนจังหวัดมหาสารคาม

สถิติอุบัติเหตุทางถนน จังหวัดมหาสารคามเปรียบเทียบ ๓ ปี ตั้งแต่ พ.ศ. ๒๕๕๗ – ๒๕๕๙

ช่วงเดือน	สถิติอุบัติเหตุทางถนน			จำนวนบาดเจ็บ						จำนวนผู้เสียชีวิต ปี พ.ศ.		
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กันยายน	๒๐	๑๕		๒๐	๑๕	๑๓	๑๐			๒๐	๗	
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พฤศจิกายน	๒๒	๒๓		๒๓	๑๕	๑๖	๑๔			๑๔	๑๙	
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คฑาวุธ มูลสมบัติ ผู้จัดเก็บข้อมูล

Community Road Crash Prevention and Reduction Network in Burirum Province

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Buriram Province has area of approximately10,393.945 square kilometers, which is about 6.11% of the total area of Northeastern Region of Thailand. It is divided into 23 districts, 188 sub-districts, one provincial administrative organization, three town municipalities, 51 sub-district municipalities, and 155 sub-district administrative organizations. There is a population of 1,536,070. The province is focusing its development on tourism with attractions such as Phanom Rung Historical Park, whereby it has become a sports town that houses a sport stadium called i-Mobile Stadium, and Sepang International Circuit. This has led to higher traffic density resulting in frequent road crash incidents in the province.

Buriram Road Crash Statistics in 2013 - 2014

Organisation	2013			2014			Increase/Decrease		
	No. of Incident	Injury	Death	No. of Incident	Injury	Death	No. of Incident	Injury	Death
Buriram Provincial Police	459	381	215	1385	1242	264	+926	+861	+49

Based on the road crash data, it shows clear high risk behaviours where most crashes involve motorcycles and mainly occur on secondary roads located within community areas where the quality of life is often neglected. Public interest in road safety is also lacking, which can clearly be seen during public holidays where road users are not responding to road safety measures. This is reflected in the road crash statistics during public holiday periods in 2015 where there were 12 casualties and 52 were injured. 12 of them were due to drink driving, 5 were speeding over speed limit, 2 were cutting in front at close distance, one driving on the wrong lane, 12 were driving using mobile phones, and 45 due to others causes. Vehicle types involved in crashes were 47 motorcycles, 31 cars, and 2 others. There were 4 crashes on village roads, 10 crashes were found on the rural roads, 24 were on national highways, and 4 municipality roads (information provided by Buriram Disaster Prevention and Mitigation Office). The situation has not improved even after the public holidays had ended where there was no community participation and continuation of road safety work. There was no key road safety officer sat the main relevant organizations, a lacking of motivation and knowledge sharing between network partners, and limited budget support, which in some cases budget was not used for systematic road safety resolutions.

Buriram has adopted the B-CM Model for provincial development with the highest aim for “peaceful and sufficient province for future generation as one family of the same kin”. Thus, Buriram Provincial Police as part of a working group committee of Buriram Road Safety Directing Center has integrated cooperative work with other road safety network agencies to carry out a project called Community Road Crash Prevention and Reduction Network of Burirum Province. Under this project, road safety solutions are carried out throughout the entire road system as well as raising the standard of road safety in community at village level in 23 districts.

Working process

A multi-disciplinary working group committee has been appointed to carry out the project activities as follows;

1. A working group committee meeting has been held to discuss the project plan and assign tasks to the team members, and define the elements required for pilot village contest.
2. A training workshop for district and sub-district leaders was conducted to form a project action plan, and village competition criteria. The local road safety network agencies consisted of police, governance body, public health, District Headman, and village committee with a total number of 300 participants
3. Budget was allocated to each district to conduct a team meeting clarify guidelines and policies on law enforcement, community check-point operation team members include Village Committee, Village Security Team, and other volunteer groups whose representatives had attended the district workshop. In addition five villages from each district were selected to compete for an outstanding road safety community at provincial level.
4. A selection panel for outstanding road safety community was appointed by the Governor to carry out community road safety evaluation.
5. The selection panel had assessed a total of 71 communities, 23 were selected, whereby they received an award from the Governor.
6. It was followed by another meeting for the awarded communities to present their community road safety work.
7. Then, a follow up and lesson learned sessions were conducted where all 23 communities that won the award were invited to the session.

Results

Products

- 23 road safety communities have been established, which resulted in safer road use by local people. In addition, the Governor had issued an instruction for every sub-district to include road safety in their safety plan with the highest aim of zero crashes, zero injury, and zero death. Five risk factors have been defined as human risk, environmental risk, vehicle risk, situational risk, and management risk. The sub-district road safety plan operates all year round, for which the budget was supported by the local administrative organizations.
- The community check-point's operating guidelines were established as followed.

Duty	Responsible Agency
1. Keep surveillance on peace and order, and road safety for villagers. For example, keep close eyes on a group of people with risk behaviors.	Representatives from Civil Defense Volunteer/Village Security Team/ Village Committee/ Community Police Volunteer/ respectable community members
2. Supervising, and advising local villagers, particularly those with risk behaviors, to comply with the traffic law and road safety practice, which those check-point operators have to be a good example.	Representatives from Civil Defense Volunteer/ Village Security Team/ Village Committee/ Community Police Volunteer/ respectable community members/ foundation and other organization volunteers
3. Public knowledge distribution on road safety rules and relevant law.	Representatives from Civil Defense Volunteer/ Village Security Team/Village Committee/Community Police Volunteer/ Sub-district Health Promoting Hospital/ respectable community members/ foundation and other organization volunteers
4. Collected local traffic and road crash data such as number of vehicles, driver license situation, helmet wearing rate, number of former road crash victims,	Representatives from Civil Defense Volunteer/ Village Security Team/ Village Committee /Community Police Volunteer/respectable community

and road crash data during public holidays.	members/ representative from risk behavioral group and their parents/ local army official
5. Conclude the activity and a lesson learned inclusive of activity outcome, obstacles being incurred, and presenting the report to the District Chief who chair the District Road Safety Directing Center.	Representatives from Civil Defense Volunteer/ Village Security Team/ Village Committee/Community Police Volunteer/ Sub-district Health Promoting Hospital/ Public Health Volunteers/ respectable community members/ representative from risk behavioral group and their parents/ local army official
6. Echo out the project outcome to the local public through different means such as village radio programmed, and village news tower to promote community participation in road safety work.	Representatives from local governance agencies/ representative from risk behavioral group/ representative from parents group

Outcomes

- The follow up work found that the local leaders are vigorous and conducted all activities in according to the given nine good deeds framework stated in the village charter that was issued by the Governor. This framework was used for all 2,564 villages, 188 sub-districts, 23 districts with details as followed;
    1) Being a good person who respects the rules.
    2) Being intelligent by integrated cooperation between family, temple, and government agencies.
    3) Balancing income where the community can rely on themselves based on a self-sufficient economy philosophy.
    4) Being healthy by giving cooperation to government agencies and sub-district health promoting hospital.
    5) Good environment
    6) Healthy society where everyone in the community is looking after their children closely.
    7) Criminal free community where there is a security team patrolling the area.
    8) Established fund for community benefits where everyone in the community take part in the fund.

9) Strengthening Village Committee who has a significant role in enhancing village development for villagers' beneficial gain.

Local participation and integrated working approach

The road safety activity of Buriram Province has adopted local community participation approaches in all levels of every stage of the activity starting from project planning, identifying the target group and project objectives, and incorporated the activity into local safety planning as part of the provincial safety policy. The safety plan involved multi-disciplinary agencies, for which their role and responsibility has been integrated to form a provincial development plan.

For a village at community level, a guideline for conducting a community check-point is formed, which had taken into account the nine good deeds for the team to follow when conducting any road safety activities. By having a competition for an outstanding road safety community the promotion effect helped integrate road safety work that was being mobilized by the Village Committee.

Key to success

Contributing factors

- The Buriram Province is a pilot province on moral principle where the nine good deeds policy has been adopted by all government agencies in all levels for both work and living life.
- A village charter was issued using the nine good deeds as a framework, which is being monitored by the provincial high executives regularly.
- Local Administration Act is used to support the work by the Village Committee.

- There has been road safety policy and instruction being issued by the National Road Safety Directing Center being handed down to the province to follow, which has given the opportunity to the province to take part in road safety work.
- The Department of Disease Control's road safety data collection and management policy and community check-point operation have motivated the local community on road safety work.

Successful conditions

- The Village Committee has been strengthened, and their role is recognized with a new uniform that made them look unique, which has given them a sense of pride. They are an important mechanism for driving road safety policy and work in a community level.
- Nine good deeds is a living principle that is the pride of the people in the province.

Obstacles

- Buriram Province is new to road safety work where road safety activity and management is not as skillful. In addition, some activities have been delayed due to heavy workload for responsible agencies.

Project evaluation

- The project evaluation was carried out by the working group committee.

Project expansion /project sustainability

- A safety plan for road crash prevention and reduction for 2017 has been formed, which all relevant agencies will be supporting and implementation.
- Support and strengthen the Village Committee for every village.
- Enhancing road safety capacity for sub-district road safety directing center so that it can further support the work of Village Committee.

Recommendations

- The Village Committee in Buriram Province has a strong and clear role and responsibility in the community, but the question still remains as to how they can be involved in the sub-district road safety directing center.
- The Provincial Thailand Road Safety Network mentors have been providing good support on the project work.

- The Provincial Road Safety Directing Center should take a role in project implementation activities continuously. For example, they can use the center's monthly meeting to monitor and follow up on project implementation.

The Strength of Chockchai Road Safety Network

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Chockchai District is one of 32 districts of Nakhon Ratchasima Province. It is situated to the south of the province and only about 30 kilometers from the central district. The district covers an area of 503.90 square kilometers, which is divided into 10 sub-districts, 128 villages, with a total population of 83,749 of which about 30,000is latent population. The district is houses 64 industrial manufacturing companies some of which are large scale industries. There are also two of national highways that pass through the district area such as National Highway 24Sikhio-DetUdom), which is a main factor contributing to a high road crash rate in Chockchai District and has become a red zone for the province. The average of road casualties is more than 35 people annually for which there are a number of causes that lead to high road crash rates such as risk spots and road users risk behaviors.

In 2014

Area	Number of Casualties
Chockchai District	35
Nonsung District	33
Pakchong District	32
Pho Klang District Police	31
Mueang Nakhon Ratchasima District Police	29

During December 2014, the district had the highest road crash rate in the province where there were more than 35 people being injured and killed in just one month period. This has led to the setting-up of a small group of people who have come together informally to take action. The group was led by Mr. Phattravut Pandee who was a rescue member of Huk31 (Chockchai Station), and Mrs. Pranee Prasongdee, a registered nurse at Chockchai Hospital. Both of their job responsibilities involved post-crash medical treatment that was a heavy workload each day. Thus, they had decided to solve the road crash problem in

Chokchai District. They first started inviting people from other relevant agencies such as Assistant Chief District Officer, Traffic Police, Highway Station, Highway Police, District Public Health, Municipality, Electrical Authority, and Road Accident Victims Protection Co., Ltd. (RVP) who is acted as an advisor to the group. This marked the beginning of "Chockchai Road Safety Network".

The group establishment is rather simple in nature, it is informal, and no official appointment is needed, which has allowed flexibility and quick responses. Most importantly everyone in the team is equal and able to form a good relationship with each other. They also have the ability to make decisions to do things within their current position and job responsibility. The group had drafted a project called **Safer Roads in Chockchai by District Road Safety Network**, which aimed at reducing road causalities, treating risk spots, involving private and civil sectors with road safety activities, and making the road safer for local people and other road users that pass through the area. Their work started by holding a monthly meeting to share any relevant information such as risk spots, or road crash data for a group discussion as well as sharing any obstacles that each of them were facing. For example, Huk31 was collecting crash statistics that occurred at the same spot, while the hospital and the police were collecting data concerning number of road crash, casualties, gender, age, and so on. As for Highway District, the information was about risk spot, its treatments, and road maintenance. The group has agreed to firstly carry out risk spot treatment work on 15 risk spots. After the risk spot was selected, the team then went to inspect the site to ensure that the treatment is appropriate and pertinent to the problem since each spot required different treatment to address different type of risk. This work was carried out in parallel to public information for local agencies and people to be aware of the risk spot so that precaution was taken when using the road while the treatment work was not yet completed. Moreover, the group welcomed community participation in risk spot treatments through Line Application Chat Group and Facebook. This was followed by requesting a meeting with the executive manager of private companies to ask for budget support and participate in road safety organizational measures activities. After the treatment was finally agreed, each member was then allocated tasks to immediately implement. Some spots can be completed fully, but in some spots only partly treated due to either lacking budget or already been included in the agency's work plan. Though, the group was still following them all up until all spots are treated. Risk spot treatment involved overpass building, intelligent traffic light signal installation, electronic warning light signal installation, and road surface improvement. All the work carried out by the group members, the road statistic data and risk spot

treatment as well as public opinion being sent through the social media was continually collected and shared to all group members.









Following the work being delivered, the number of casualty from December 2014 to October 2015 had come down to 14, and from November 2015 to May 2016 the number went down to 8. A total of 15 spots were treated and one spot (in front of Charoen Pokphand Foods PCL factory) has received support to build an overpass, and the intelligent traffic light was installed.




Other activities were traffic and road marking in the area of Chockchai Municipality Market, and educational youth training for those with risk behaviors by the local police station. All the work was well accepted by the general public, and had received media attention both

locally and nationally when they came to report on risk spot treatment work. The group had also presented the information at a district level continuously, which led to an official establishment of a working group committee for District Road Safety Directing Center by Chockchai District Chief.

Key success factors have a lot to do with the bravery and dedication of an individual like Mr. Phattravut Pandee to make change and continue to maintain hard work for the sake of the public safety. Another factor was the fact that each team member was able to make a decision or able to implement work immediately. Moreover, data and information collection was done continuously and then shared with relevant agencies as well as presenting it at every possible occasion.

The work plan for 2017 will focus on promotion of community participation and community check-points in every sub-district. Additionally, the work will involve road improvements through road engineering work, fundraising for building a bypass road to solve risk behavior of riders who drive on the wrong lane at the front of Charoen Pokphand Foods PCL factory. Another activity will be a mobile off-road riding track to educate students on the traffic rule and safe riding practices at the local primary and secondary schools. Last but not least is to convince the District Road Safety Directing Center working group to be in charge and continue the work for road safety sustainability. However, it has to be kept in mind that when the work is done informally, there could be an adverse impact when a group member is transferred or changed. This also includes the fact that there may be no longer a key person to coordinate and link them all together, which resulted in the work being halted or interrupted.

The Development of 5-Dimension Road Crash Data System to Determine Community Road Safety Measures for Road Crash Reduction in Surin Province, 2015-2016

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The Thailand road safety situation reported in 2014 by the World Health Organization (WHO) estimated that the road crash casualties of the country was ranked at number 2 in the world where 24,237 were killed, which is equal to 36.2 per 100,000population. In addition, the information from the Ministry of Public Health found that 15,045 people were killed from the road rash, which is equal to 23.16 per 100,000population or 40 people per day or 2 people per hour, while an estimated number of 107,123 people were admitted to the hospitals (data from 2013).

Based on the information from the Bureau of Policy and Strategy, Office of Permanent Secretary, Ministry of Public Health, it was found that for the past 15 years (2000-2014) number of road crash casualties tend to reduce for the first 10 years until 2010 or until the picture was revealed. In 2010, data checking commenced where the information from a death certificate was compared with a cause of death certificate to ensure that the cause of death showed on a death certificate reflects the actual and correct cause. In doing so, casualties related to road crashes jumped from 15 per 100,000population in 2009 to 21.61 per 100,000population in 2010, and reached 23.16 per 100,000population in 2014. When looking at the statistics for the past 5 years (2010-2014), the rate of casualties was between 21-23 per 100,000population, which is around 13,000-15,000 people annually.

The road crash casualty statistics from the Health Service Provider Board Office 9, which covers the area of Nakhon Ratchasima, Chaiyaphum, Buriram, and Surin Province in 2014, found that 733, 132, 334, and 310 people were killed in each province respectively. This is equal to the casualty rate of 28.03, 11.62, 21.19, and 22.30 per 100,000 population in each province.

Thus, if data can be collected systematically in all 5 dimensions, it would be beneficial in help setting up suitable road safety measures and road safety solutions applicable to the local context. Data source is not just collected from hospitals, but has to

include information concerning another 4 dimensions of road crash investigation to determine the cause, identifying risk behaviors, related information concerning roads, and environment.

Objectives

1. To develop a 5-dimension road crash database system to be used for community road safety measures and road safety solutions.
2. To follow up and assess the local capacity in adapting the 5-dimension road crash data for setting up their own road safety measures.

Work process

Specifically select the target area where 12 districts with highest road crash casualties in Surin Province occurred. They consisted of Mueang Surin District, Tha Tum District, Chumphon Buri District, Samrong Thap District, Buachet District, Kap Choeng District, Sangkha District, Chom Phra District, Si Narong District, Prasat District, Rattanaburi District, Sikhoraphum District. After the area had been identified, the next work focused on promoting local road safety capacity by giving training to responsible officers from relevant agencies which was divided into two levels as follows;

- At provincial level: 10 officers from Surin Road Safety Directing Center.
- At district level: 50 people from each office who represented hospitals and public health office, police, land transport authority, highway office, and local administrative organization.

A 2-day training was held where the content was consisted of;

1. Information on injury and countermeasures
2. Road crash injury information on 5-dimension system
3. Information management and practice
4. Situational report writing with report writing practice
5. Information application for road safety solutions

Tool for analyzing 5-Dimensional Road Crash Data

Risk		Prevention	Health Outcomes	
Determinants	Behaviors	Program response	Morbidity/ Mortality	Event-based
1. Increasing vehicle registration each year for each vehicle type 2. Number of dangerous spots and risk spots	3. Helmet wearing behavior 4. Seatbelt wearing behaviors 5. Using mobile phone while driving 6. Driving at high speed 7. Drink driving behavior	8. Head trauma rate for injury and death 9. Number of road safety policy in a national level 10. The proportion of operations that meets the standards for EMS Response time 11. Quality of care for 5 patient groups (bleeding ,splint ,C-splint, airway, fluid) 12. Detecting 10 main charges of the police 13. Number of risk spot that has been treated 14. Number of emergency medical units	15. Morbidity rate, mortality rate, mortality rate divided by province/region, and further divided by week/month/ year	16. News report from main stream media, and National Institute for Emergency Medicine 17. Initial report from Provincial Public Health Office, and the Office of Disease Prevention and Control 18. Injury investigation report

Information source

Information for item 1 - 16 shown on the table has been collected from different sources as follows;

1) Vehicle registration report from Department of Land Transport.
2) Accident Report Management System (ARMS) from Department of Rural Road, and Highway Accident Information Management System (HAIMS) from Department of Highway and Department of Rural Road including the Emergency Information Management from National Institute of Emergency Medicine.
3) A report of Behavioral Risk Factors Surveillance System (BRFSS) from Bureau of Non Communicable Disease, and a survey report on Thailand helmet wearing rate from Thai Roads Foundation and Injury Surveillance System from Bureau of Epidemiology.
4) A survey report on Thailand seatbelt wearing rate from Thai Roads Foundation and Injury Surveillance System from Bureau of Epidemiology.
5) From the Injury Surveillance System from Bureau of Epidemiology.
6) From Accident Report Management System (ARMS), Department of Rural Road, and Highway Accident Information Management System (HAIMS) from Department of Highway and Department of Rural Road, and road accident investigation from Police Information System (POLIS), Royal Thai Police.
7) Injury Surveillance System from Bureau of Epidemiology.
8) Injury Surveillance System from Bureau of Epidemiology.
9) Database has not yet developed.
10) The Emergency Information Management from National Institute of Emergency Medicine.
11) Injury Surveillance System from Bureau of Epidemiology.
12) Road accident investigation from Police Information System (POLIS), Royal Thai Police.
13) Accident Report Management System (ARMS) from Department of Rural Road, and Highway Accident Information Management System (HAIMS) from Department of Highway and Department of Rural Road
14) The Emergency Information Management from National Institute of Emergency Medicine.
15) OP/PP Individual Records (43 files), which reported information on individual patients from three funding schemes, which is collected by Department of Disease Control, and death certificate database from Bureau of Policy and Strategy, Ministry of Public Health.

16) Under the process of cooperative database development by Department of Disease Control (2015).

Outcomes

After the training completion, a follow up process was made and found that there are a total of 10 districts that have used the 5-dimension data analysis to identify the crash causes and then presented all information at the Road Safety Directing Center meeting for road safety solutions, with details as follows.

1. Mueang Surin District; focused its data analysis on the cause of crashes such as unroad worthy vehicles, no warning signs, or drink driving behaviors. After the cause was identified and presented at the meeting, the road safety counter measures were then carried out. For example, risk spots were treated, community check-points were conducted, and alcohol free zone at community social events was allocated.
2. Kap Choeng District; focused its data analysis on the cause of crashes such as not having street lights, lack of traffic signal lights. After the cause was identified and presented at the meeting, the road safety counter measures and risk spot treatments were then carried out. For example, tyres were used to divide the road lane that passed in front of the local market, an electronic warning light was installed at Prasat Intersection, Hinthon Junction, and Bandan Junction. In addition, a community check-point activity was carried out in Khok Takhian Sub-district, while a public road safety campaign on the drink driving issue was carried out during New Year Holidays.
3. Samrong Thap District; focused its data analysis on the cause of crashes such as bumpy road surface, and drink driving behaviors After the cause was identified and presented at the meeting, the road safety counter measures and risk spot treatment were then carried out. For example, the Highway Depot was informed of the problem, and road safety public campaign to address drink driving issue and safe road using behaviors were promoted.
4. Tha Tum District; focused its data analysis on the cause of crashes such as road curves and drink driving. After the cause was identified and presented at the meeting, the road safety counter measures and risk spot treatment were then carried out. For example, a road safety public campaign to address the drink driving issue and safer road using behaviors were promoted, and a community hearing was held to establish community road safety rules.

5. Buachet District; focused its data analysis on the cause of crashes such as narrow roads, unclear signs, and drink driving. After the causes were identified and presented at the meeting, the road safety counter measures and risk spot treatment were then carried out. For example, risk spots were treated where clear warning signs were installed and the surrounding environment was cleaned up to increase visibility. Moreover, public campaigns to promote helmet wearing and fasten seatbelts were also conducted as well as carrying out a community check-point.
6. Sangkha District; focused its data analysis on the cause of crashes such as rough road surface, no street lights, no warning signs, poor visibility due to overgrown tree and bushes, drink driving, and reported on road crash injuries. After the causes were identified and presented at the meeting, the road safety counter measures and risk spot treatment was then carried out. For example, road surface was repaired, trees and bushes were trimmed down, warning signs were installed, safe driving behaviors knowledge session was held, community check-points were conducted in every public event and holidays, and increased frequency of conducting the police check-point.
7. Prasat District; focused its data analysis on the cause of crashes such as intersections comprising village roads and main roads with no traffic light signals, which is some areas were still under construction. Additionally, the road was narrow without road shoulder for parking, not having enough street lights, traffic signs were in bad condition, missing warning signs, overgrown trees and bushes, drink driving, no helmet wearing and seatbelts were not fastened, driving on the wrong lane, and speeding. After the causes were identified and presented at the meeting, the road safety counter measures and risk spot treatment were then carried out. For example, a community check-point was conducted, installation of traffic light signals, clearing out overgrown trees, installation of a warning sign for dangerous spots, conducting a safe driving training, and selling helmets at low price.
8. Rattanaburi District; focused its data analysis on the cause of crashes such as lacking warning signs, and drink driving. After the cause was identified and presented at the meeting, the road safety counter measures and risk spot treatment were then carried out. For example, installation of a warning sign for areas where rice was drying up (a typical practice that local villagers

undertake is to dry rice on the road), installed more traffic light signals, distributed more information of safe driving, and helmet wearing to public.

9. Chom Phra District; focused its data analysis on the cause of crashes such as lack of warning signs, overgrown grass on the road side, and drink driving. After the cause was identified and presented at the meeting, the road safety counter measures and risk spot treatment were then carried out. For example, installation of more traffic light signals, advertisement signs at the intersection were prohibited, conducted a public promotion campaign on helmet wearing, and held a community check-point during public holidays.
10. Si Narong District; focused its data analysis on the cause of crashes such as lacking warning signs. After the cause was identified and presented at the meeting, the road safety counter measures and risk spot treatment were then carried out. For example, establishing the District Road Safety Directing Center, treated 13 risk spots, conducted a training on risk behaviors for officers and community leaders for monitoring local people' road using behaviors.

Key to success

Contributing factors

Surin Province has conducted a project to enhance the capacity of the District Road Safety Directing Center network agencies, for which the Provincial Disaster Prevention and Mitigation Office was the key responsible agency together with other Provincial Road Safety Directing Centers. The capacity development was focused on data analysis using 5-dimension road crash databases. The knowledge learned was then used in the district area and presented to the District Road Safety Directing Center for planning road safety issues and counter measures, to be involved;

1. Risk spot treatment and improving surrounding environment improvement
2. Conducting a community check-point during New Year and Songkran Holidays
3. Public knowledge on safe driving skills and behaviors
4. Finding helmets for riders at low price

Conditions

In order to effectively utilizing the 5-dimension road crash data system in full, it is important that the information used be thoroughly checked with multiple sources which requires a dedicated team to truly want to solve road safety issues in their local area. Thus, the local leaders or the key coordinator has to be able to link all network partners together for good cooperation.

Road Crash Prevention and Reduction System Development by District Public Health Team in Nakhon Ratchasima Province

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Nakhon Ratchasima Province, also called “Korat”, is said to be a gate to Isan (Northeastern) Region. It is located about 259 kilometers from Bangkok, and divides its governance into 32 districts, 289 sub-districts, 3,743 villages with a total area of 20,493.968 square kilometers. The province has a number of national highways passing through which are transportation arteries that link to other provinces in the region. The road leading to the province has a straight alignment with some sections passing through the mountain range such as Mittraphap along with other bypass roads number 201 and 304. Therefore, the province has received a large volume of vehicles on all roads, brings a high road crash rate that is not just limited to long public holidays but rather on a daily basis. During the Songkran Holiday, the Disaster Prevention and Mitigation Center found that there were a total of 238 crashes, 321 people being injured, and 38 people killed, while for Nakhonratchasima alone there were 106 crashes with 115 people being injured and 13 were killed. The leading cause of the crashes was drink driving, speeding, unsafe driving such as cutting in front at close range. When looking at the data in more detail, it found that the overall road crash statistics of the province is higher compared to other similar areas.

Original resources...

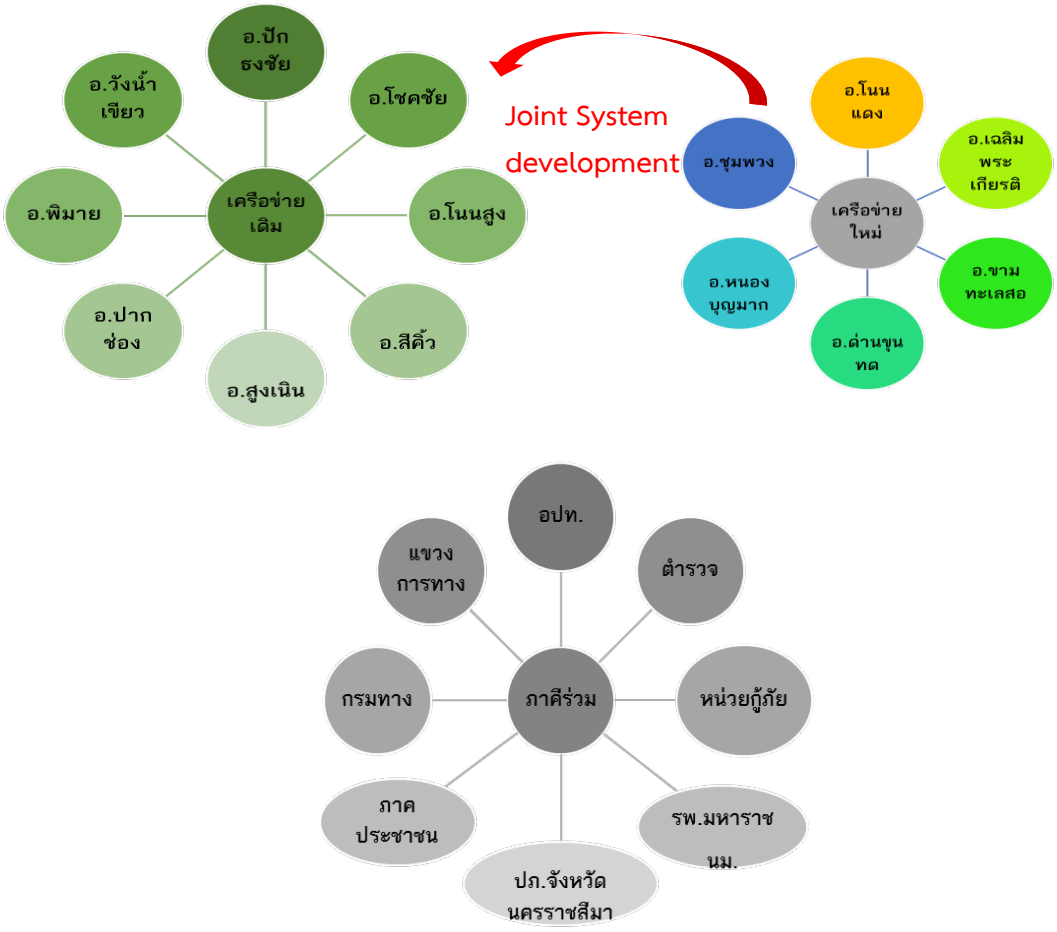
In 2014 there was a project to develop a network to monitor and investigate a road crash incident to help mobilize the road crash prevention policy at a district level. For Nakhonratchasima, there were five working processes of; 1) Community needs assessment planning, 2) Implementing community needs assessment, 3) Information analysis, 4) Information presentation to the committee or working team, and5) Strategic planning and action plan process. ***Giving birth to model area*** where 10 districts consisting of Pak Chong, Sikhio, Sung Noen, Wang Nam Khiao, Pak Thong Chai, Chock Chai, Non Sung, Phimai, Bua Lai, and Mueang Nakhonratchasima. Adapting the **Change Model** approach together with the road crash investigation form that had been developed, where the **outcome** showed that in some areas where all working processes were followed it would have yielded effective

output. For example, a multi-disciplinary working team was formed, and local information was discussed and analyzed before a solution to the problems and issues was agreed and implemented. However, ***in some area,*** the work cannot fully deliver due to having to collect data from various sources and involving multiple agencies. In 2015, the same area was selected and expanded into new area to develop a road crash prevention and reduction system by the district public health team in Nakhonratchasima Province.

Network establishment

- **Provincial working process:** 5 local representatives from each selected district consisted of a project coordinator, a responsible person for epidemiological information, a representative from the Surveillance and Rapid Response Team (SRRT), and two from relevant district agencies.
- **District working process:** key project responsible officer from the District Office, a responsible person for epidemiological information, and all team members from 14 districts.

Project network partners



Role model on work mobilization in pilot district

District	Description
Chock chai District	■ Started from a small team. ■ Established a multi-disciplinary team where the District Chief is an advisor to the team. The key leading agency was the Chockchai Hospital, and team members were from the Land Transport Office, Highway Police, Highway District Office, Disaster Prevention and Mitigation Office, and Division of Public Works from Municipality Office. ■ Project mobilization by District Disaster Prevention and Mitigation Office and District Health System (DHS). ■ Appointed a working group. ■ Welcome local people participation in the project. ■ Collected data from three databases and analyzed. Every crash case was investigated (7 in total) and found to be due to human error. ■ A meeting was held every 3 months to have risk spots treated. Found a total of 15 risk spots where the majority of them had been treated and found that crash incidence decreased. For example, a concrete overpass was built in front of the CP Factory, and holding a religious charity event to solve unsafe driving behavior such as driving on the wrong lane. ■ Conducted a pilot activity called "***Ultra Volunteer Group***" ■ Information was gathered from different sources and shared with the general public. A community visit was also made to interview people where risk spot treatments on main roads were moving into the community.
Chum Phuang District	■ Officially appointed the district committee. ■ Project mobilization by District Health System (DHS). ■ The committee was consisting of District Chief, Assistant to District Chief of Security Affairs Section, with information support by the District Public Health Office. ■ The road safety network was consisted of police, electrical authority, local administrative organization, Highway Depot, and District Disaster Prevention and Mitigation Office.

District	Description
	■ Core team was the hospital and District Public Health Office. ■ Communication was made via Line Application Chat Group. ■ A monthly meeting for the District Road Safety Directing Center, and Village Headman was held where the information concerning the road crash data (i.e. number of casualty), and community check-point operation was presented by Disaster Prevention and Mitigation Office. ■ The District Road Safety Center structure was adopted at community level. ■ Open floor to a lesson learned session for the multi-disciplinary team and emergency rescue team were an important part.
Non Sung District	■ Project mobilization by District Disaster Prevention and Mitigation Office and District Health System (DHS). ■ Conducted a road crash survey in 2014. Established a team to carry out community hearing in 2015. The team consisted of local administrative organization, Highway District Office, Schools, and District Public Health Office. In 2016, conducted a road crash investigation that occurred at the Weight Station. ■ Road Investigation Team was a sub-committee. ■ The District Road Safety Directing Center held a meeting only during long public holidays. ■ The main committee presented the information at the district meeting. ■ The sub-district administrative organization participated in risk spot treatment at Tanot Intersection.
Non Daeng District	■ Proposed to the Policy and Planning Division at hospital. ■ Focused on identifying risk spots. ■ The main committee chaired by the District Chief called for a meeting with all relevant agencies and had a discussion with the police. ■ Meeting session: special session (crash incident/Dengue Fever) : normal session (not as intense as it should be) ■ A sub-committee was led by the hospital and District Public Health Office. ■ The intermediate level committee had held 2 meetings. ■ A network was formed and information was transferred back to the

District	Description
	community. ■ In 2017, a sub-district safety planning to be carried out to request for budget support from the National Health Security Office. ■ Local participation promotion.
Kham Thale So District	■ Established the District Road Safety Directing Center, but not yet at full strength. ■ There were a total of 13 risk spots where 3 of them were treated. ■ The committee was chaired by the District Chief, and Assistant to District Chief of Security Affairs Section which issued an instruction to appoint the committee along with roles and responsibilities. ■ The hospital and the police were responsible for road crash data information and presentation. ■ The main committee held a meeting during public holidays to solve road safety issues. ■ A sub-committee mobilizing the work. ■ Local relevant agencies were involved in a road safety project called "safe driving" using the municipality budget.

Lesson learned

1. Road crash prevention and reduction work should be integrated into the routine job responsibility of all relevant agencies.
    - The public health agencies have an increased variety of activities.
    - The supportive agencies (network partners) have gained more awareness of their role and responsibility and become more involved in the work.
2. To develop the area to become a model for other areas for knowledge exchange and experience learned where 7 districts have shown a good potential and able to elevate the development into a higher level.
3. To turn it into a provincial policy and integrated into a routine work with working process and approaches in place.
4. To develop a road crash data and information center in all 8 districts (with all being linked to one another).
5. The Office and District Health System (DHS) team is strong and able to continue work in 7 districts.

Key to success

1. There is a district model for road crash prevention and reduction system.
2. Data was gathered from various agencies that are relevant to road safety with a main information center at the District Public Health Office.
3. A regular meeting with multi-disciplinary committee members is held to brainstorm solutions, plan utilization of existing resources, and develop safety measures in order to immediately address and solve the road safety issues for local community.
4. Produce a number of opportunities as information to be presented to the senior management.
5. Conducting monitoring and evaluation on the work continuously.
6. Establish a multi-disciplinary team with clear role and responsibility.
7. Appointing a working group committee divided into different levels of central committee, provincial committee, district committee, and community committee.

Recommendations for future work

1. Enhance information accessibility to cover every district in order to be aware of problems, and causes before solutions can be formed.
2. Increasing use of comprehensive information in the work place.
3. Enable a key road safety leader, which yet to be identified.
4. Bring the issue to the local administrative organization to establish linkage into a community level.
5. Developing the team's potential for a clear, consistent work concept.
6. Promote participation of all relevant agencies.
7. Support the work by the area that shows a clear ability to continue with their work.

Obstacles

1. Incomplete information and database from different sources are not linked.
2. Limited budget.
3. Each committee member has heavy workload, so they cannot fully dedicate their effort into the project work.

School Road Safety Network for Road Safety Culture in Maha Sarakham Province, 2015

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Mrs. Siranee Imnamkhaw
Srimahasarakham College of Nursing

A starting point for the working principle

Maha Sarakham Province began its road safety network partnership in 2012 led by Srimahasarakham Nursing College whose work was involved promoting road safety awareness and road safety culture in educational institutions through school and community participation. The project has given birth to the development of road safety knowledge kit to encourage teaching and learning in eight pilot schools. In 2014, the work had expanded into the establishment of road safety culture in educational institutions to reduce the injury and death among students. The working approach used was adopted from a process called participatory action research (PAR) where coaching by the project mentor was also used, and the institution can implement the project work as well as problem solving on their own within the framework of HEART MODEL (H= HADDON MATRIX, E= Evaluation Context, A= Attitude Change, R= Responsibility, and T= Teamwork). The initiative allows students of eight pilot schools back in 2013 to demonstrate their coaching ability when pairing up with nine other schools in 2014. This is a good reflection of a role model by the youth group who are determined to promote road safety culture and a sense of social responsibility, all of which leads them to become a good member to the society and the country in the future.

Original resources/ Strength and weakness of the local area

There were a total of 17 participating schools consisting of Kosumwittayasan School, Khuanpittayasan School, Watglanggosum School, Srikosumwittayamittapab209 School, Nongleksuksa School, Borabu School, Laoyawwittayakhan School, Banborabue School, Mahasarakham University Demonstration School, Thakhonyang Phittayakhom School, Chiangyuenpittayakom School, Banchiangyun School, Phadungnaree School, Mahawichanukool School, Rajbhat Mahasarakham University Demonstration School, and Sarakharmpittayakom School.

Team/Community/Target Group/Network Participation

A road safety network team meeting was held to plan a road safety strategy, which allowed all relevant parties and individuals to participate in the planning, selecting the team leader from former eight schools to coach the new one, and set up roles for nursing college students to act as HEART MODEL starter.

Working group members, network partners, and roles

Project working group members as well as participating members consisted of eight schools in 2013, nine schools in 2014, seven district police stations, Provincial Public Health Office, provincial hospital, motorcycle companies, Provincial Public Relation Office, local media, Provincial Land Transport Office, Srimahasarakham Nursing College, and Road Accident Victims Protection Co., Ltd. (RVP).

Activities are as follows;

1. Carried out a meeting with the former school working group committee and management of all 17 schools to outline the project objectives, and select the school team leaders to adopt the HEART MODEL working principle within their coaching for new schools.
2. A road safety network team meeting was held to plan a road safety strategy and action plan, which allows all relevant parties and schools to participate in the planning.
3. Student leaders and coaches conducted a survey on road safety related information such as the number of motorcycles, number of helmets being owned, helmet wearing rates, mandatory insurance coverage, driver's license ownership, and school's existing road safety policy and related measures.
4. Provided a handbook for the expansion of safety culture operations for all 17 mentoring schools together with the associated forms to use as a guide.
5. The working group committee conducted a HEART MODEL preparation meeting with the school counselor, and the original school-based student mentor to understand the process and job responsibility.
6. Advisory teachers and student mentors from Sri Mahasarakham Nursing College had a meeting with the former school mentoring team for preparation and planning prior to starting a new school activity. In addition, the new school's student leaders were allocated tasks to assist in MOU signing ceremony and HEART MODEL training workshop.

7. Organized the MOU signing ceremony between the original mentoring schools from 2013-2014 with the new pilot schools from 2015. The District Chief or Superintendent of District Police Station from the local area was invited to preside over the occasion and cosign the MOU with the participating school directors.
8. Then, the former mentoring school progressed its work, while the new school brought HADDON Matrix analysis outcomes and social measures back to their schools for formal announcement and commencement of work to promote road safety culture. Their work also involved organizing training and driver's license exams for students who ride motorcycles, keeping close attention on risk behaviors and enforcing helmet wearing measures.

Implementation of the five tactics and five working principles

The five road safety tactics started with road safety **data and information** on students' road crash statistics, followed by **multi-disciplinary network** participation both at district and provincial levels for support. The next tactic involves a search for the **highest risk spot** and then risk behaviors. After the spot of concern has been identified, the treatment with **highest cost effective value** is selected for implementation. All of the working process need to have **participation by all relevant agencies and stakeholders.**.

Using **five road safety working processes** for Coaching and HEART MODEL

- **Presentation of information or problem issue:** Srimahasarakham Nursing College presented the project at the provincial security and senior management meeting for inclusion into the policy and school implementation.
- **Cooperative network:** Every educational institution was linked as well as coordinated with both old and new working teams and mentors.
- **Take up task:** Every educational institution has taken up the project work and integrated with routine duties to drive road safety work.
- **Assessment:** Every educational institution has completed a follow up and evaluation process carried out by the mentoring team and Srimahasarakham Nursing College.
- **Support:** Provided an opportunity for the working team to present their work as well as exchanges among different project teams. This is not just for knowledge exchange, but also an opportunity for public recognition for those who delivered good work with an award and certification being presented.

Productivity/ change results

. Summary of school road safety activity that was implemented during the 2015 academic year consisting of the following activities:

Summary of road safety policy by school management

1. The executives are project consultants and budget supporters for project implementation.
2. Encourage students to wear helmets 100%.
3. Focus on providing the knowledge on driving discipline, and traffic law once per semester.
4. Encourage students to apply for a driver's license.
5. Rearrange school's parking in the garage.
6. Create safe driving discipline in school.
7. Safe driving.
8. Assign job to the working group, which consisted of advisory teachers and students studying at the Diploma level.
9. To build a safe driving culture in schools 100%.
10. To improve traffic in schools.
11. To change the driving habits of students and school personnel.
12. To prepare and prevent road crashes.
13. Focus on helmet wearing with a driver's license, and driving safely.
14. Everyone who drives a motorcycle must wear a helmet to school.
15. Every car driver must fasten seat belts on the journey to school.
16. Teacher and student inspectors control vehicles entering school.
17. Address the national, provincial and educational policies regarding road crash reduction.
18. Conduct a project that promotes motorcycle safety such as turning-on headlights while wearing a helmet to promote road crash reduction projects both within and outside of school.
19. Comply with traffic law.
20. Surveyed the overall student vehicle usage data/ Dormitory students; walk, public transport, personal transport (bicycles, motorcycles), hired cars.
21. Risk analysis based on the information from vehicles that are involved in the road crash.

22. Define student policies in various dimensions to interrelate with one another such as promotion campaign/school disciplinary rules/information technology management.

The overall pattern of driving school road safety project is as follows.

- All schools surveyed vehicle driving information.

The outcome of HADDON MATRIX analysis of current student risk behaviors that may lead to road crashes has presented number of risk behaviors as follow;

1. Students lack funding to purchase helmet.
2. Some students have not yet realized the importance of helmet wearing.
3. No money for renewing mandatory insurance coverage.
4. Do not wear a helmet.
5. Lower secondary students do not have a driver license (under legal age)
6. Students riding on the wrong lane and driving unresponsively.
7. Carrying3 people on one motorcycle.
8. Modified motorcycles.
9. Students park motorcycles outside school.
10. Driving recklessly with disregard for traffic discipline.
11. Riding motorcycles with high speed both inside and outside schools.
12. Using a mobile phone while riding.
13. Failing to comply with the traffic law such as not signaling when making turns.
14. Riding dangerously and racing against each other.
15. Cutting across the road in straight line without making a stop or slowing down to give way to the oncoming traffic.
16. Lacking safety equipment such as reflective jacket, and traffic cones to conduct traffic activity in schools.
17. Ineffective turning signal lights
18. Overtaking maneuver.

Solutions to unsafe driving and risky behavior for student leaders to implement, whereby some of the solutions have been suggested by students:

1. Knowledge training for students to be aware of safe riding and benefits of helmet wearing.
2. Seeking sponsorship from other organizations for free helmet distribution.
3. Promote helmet wearing for students.

4. Promote driver licensing for students.
5. Hold a traffic disciplinary session once per semester.
6. Limiting the number of students on a motorcycle to no more than 2 people.
7. Promote traffic discipline among other agencies.
8. Conduct a discussion with the risk behavior group of students.
9. No speeding when riding a motorcycle.
10. Training of safe riding skills.
11. Training on traffic law and related Act.
12. Safe driving campaigning in schools, such as short films and drawing competition, or road safety exhibition.
13. Helmet wearing behavior inspection by student inspectors and leaders. A warning is issued for violators together with having a knowledge training session on traffic law, on what to do when crashes occur, and safe riding skills.
14. Training on traffic conditions.
15. Safe driving promotion campaign.
16. Showing a video on road crash incidents and their impact when drivers fail to comply with the traffic rules.
17. There is helmet wearing inspection being conducted both before and after school hours.
18. All motorcycles and cars have to obtain mandatory insurance e coverage.
19. Student leaders present a report on road safety activities in school every month.
20. Helmet wearing rules are set and agreed with clear punishment for violators, whereby they can either do community service work or pay a fine.
21. Behaving as a role model.
22. Road safety conscience establishment.
23. Student discipline division and student committee are to monitor the students' road using behaviors.
24. Join the Parents Association to provide driver license training to students (for motorcycle).
25. Making traffic signs to be enforced in schools.
26. There are disciplinary penalties for students who violate traffic regulations in schools.

After the completion of the Heart Model working process evaluation, it was found that;

School safe driving and 100% helmet wearing campaign in 2015 using the Heart Model, has involved the following work.

School learning and teaching subject Integration;

Wangyaosuksawit School

1. Volunteering Activity
2. Advisory Activity
3. Boy Scout & Girl Guide Activity, and Reserve Officer Training Cops Student.
4. Subject on ethics
5. Health education Subject

Kantarawichai School

1. Civic duty under the Social studies Subject
2. Boy Scout
3. Reserve Officer Training Cops Student

Borabuwittayakhan School

1. Health education Subject for road crash reduction and safe driving discipline
2. Civic duty for traffic law compliance and driving with discipline
3. School clubs where student leaders provided information on safe driving culture, which was integrated into every club to promote road safety awareness and ownership to the issue.

ThakhonyangPhittayakhom School

1. Civic duty Subject where an explanation on traffic rules compliance is part of citizen's duties.
2. Health education for road crash impacts on human body and internal organs

Mahachaipitayakhan School

1. Civil Duty Subject on basic law
2. Health Subject on traffic law
3. Thai language Subject by writing essay on safety

Nondaengwittayakhom School

1. Health education and Physical education Subject for safe driving skills by A.S. Motorbike Company.

Chuenchompittayakhan School

1. Thai Subject = Essay writing on safety
2. Social studies Subject = Basic Law

3. Health education Subject = Traffic rules
4. Computer Subject= Documentary (short films)
5. Arts Subject = Drawing of traffic signs

Mahasarakham University Demonstration School (Secondary)

1. Health education and Physical education Subjects
2. Boy Scout Subject
3. Safe driving skill activity
4. Social studies Subject in some parts

Highlights in project development

The use of Heart Model through coaching technique to carry out project activities began at Srimahasarakham Nursing College in 2014, which marked the beginning of a coaching mentor group in 2014. This mentoring group has then carried out follow up and evaluation process for all 17 participating schools in 2015. Thus, there were two levels of mentors consisting of Coaching Level (student leaders from 17 schools), and START HEART MODEL level (Srimahasarakham Nursing College students), which help support work as stated below.

Kosum Phisai District

1. Kosumwittayasan School was coaching Khwaorao Suksa School in Kosum Phisai District.
2. Khuanpittayasan School, Watglanggosum School, Srikosumwittayamittapab209 School was coaching Wangyaosuksawit School in Kosum Phisai District.
3. Nongleksuksa School was coaching Naphopittayasan School in Kut Rang District

Borabue District

1. Borabu School and Laoyawwittayakhan School was coaching Nonraseewittaya School.
2. Borabuwittayakhan School and Banborabue School was coaching Nondaengwittayakhom School.

Kantharawichai District

1. Mahasarakham University Demonstration School (Secondary) and ThakhonyangPhittayakhom School was coaching Kantarawichai School.

Chiang Yuen District

1. Chiangyuenpittayakom School, Banchiangyun School was coaching Chuenchompittayakhan School in Chuen Chom District.

Mueang Maha Sarakham District

1. Phadungnaree School was coaching Burapha Phittayakhan Municipal School.
2. Mahawichanukool School was coaching Ban Songnangyai Municipal School.
3. Rajbhat Mahasarakham University Demonstration School was coaching Si Sawat Witthaya Municipal School.
4. Sarakharmpittayakom School was coaching Mahachaipitayakhan School.

Key success (How to)

Srimahasarakham Nursing College mentors produced a guidebook for mentors to support school road safety activities, which involved the following work.

1. **Ice breaking activity:** It is considered to be an important activity since it allows all parties from former school teams, the Srimahasarakham Nursing College mentors, and student leaders from new schools to get to know each other and form good relationships. It is also an activity that promotes self-confidence where students dare to speak, to think, and express their opinion, which helps others to see capability within them.
2. **Contextual Analysis of Schools:** A group members of each school got together with a coaching mentor to discuss the road crash safety issues in schools before brainstorming for a suitable solution through social sanction measures. The group has reflected the analysis by divided into five groups and followed.

   Group 1: Risk spot

   Group 2: Risk behaviors

   Group 3: Participation

   Group 4: Solutions

   Group 5: Subjects being integrated with road safety knowledge

   The mentor provided advice and shares the experience without making an instruction. Each school has to conduct an analysis based on their context since each of them is in various local conditions.
3. **Project presentation by new student leaders:** The group decided to send a representative from the new school team to present the project work, which gave the students the opportunity to work together in analyzing the information on problems, issues, the causes and possible solution to the problems. This activity has taught them to work as a team and reach final mutual agreement, which helps promote diversity on solution ideas and leadership both individually and as

a group. Moreover, it has given the opportunity for new student leaders to exchange opinions, take ownership for the work, and are able to suggest possible solutions that are suitable to their school context. This recommendation was then presented to the school director to be considered by the student council for implementation.

Road Crash Prevention and Reduction Network Development in Buriram Province

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The Governor of Buriram Province (Mr. Seri Sihatrai) has brought in a case by case management system model called Buriram Case Management Model (BCM-Model) for provincial development with the aim for making Buriram a "peaceful and self-sufficient province where people are as one family". Thus, nine success factors were determined under the Peaceful Village Charter of 9 good deeds (good person, intelligence, balance income, healthy, ample environment, happy society, free from crime, self-sufficient funding, and strengthening Village Committee).

Buriram road crash statistics between 2014 and 2015 found that:

- 1,708 crashes in 2015, which is 410 less than 2014
- 1,155 people were injured in 2015, which reduced from 2014 by 603 people
- 270 people were killed, which reduced from 2014 by 21 people

Despite having all numbers reducing from the previous year, the real goal for Buriram was to have "zero crash, zero injury, and zero death". In order to effectively achieve the highest goal, all villages were asked to compose a village plan according to the Peaceful Village Charter of 9 good deeds to help prevent and reduce road crashes all year round.

Buriram Road Safety Directing Center has been working on road safety issues in the province by integrate work with other relevant agencies and across all sectors. For example, the work has involved Provincial Police, Provincial Public Health Office, Provincial Land Transport Office, Highway District, Rural Highway District, Road Accident Victims Protection Company Limited (RVP) - Buriram Branch where Head of Provincial Disaster Prevention and Mitigation Office is a secretariat to the center. The center has received funding support from Thai Health Promotion Foundation and Department of Disaster Prevention and Mitigation, and mentoring as well as working support from Thailand Road Safety Network.

Working process

The work began with planning of general road safety measures for road crash prevention and reduction during New Year and Songkran Holidays such as road crash management measures, safe road using measures, safe vehicle measures, safe road users

measures, emergency response measures (search and rescue), law enforcement measures, and other related security measures for people and tourist safety.

Solutions to road crash issues were, for example, risk spot treatments for regular crash locations, major crash spot, and train track crossing spot. Another type of activity is road safety campaigning during New Year and Songkran holidays in 2016 where there were community check-points, road user service points, and activities to mark a National Disaster Prevention Day for 2015 for public awareness and promotion.

Activity at the Opening Ceremony of Road Safety Center during New Year Festival in 2016

Road Safety Activity during Songkran Festival in 2016

A meeting between the provincial committee, working group committee, District Chief, District Police, and all District Public Health Offices was held through a VDO Conference system at the local police station. At the meeting, the project outcome work was

presented to the provincial committee for information and seeking advice wherever applicable. An integrated working model and approach that combined the B-CM Model and the Peaceful Village Charter of 9 good deeds has created a true participation process in road crash prevention and reduction work in all dimensions covering all agencies, across all the sectors, and from all levels down to the community level.

Road Crash Prevention and Reduction Promotion Campaigning on National Disaster Prevention in 2015 and during New Year Festival in 2016

A community check-point is one of the road safety measures used to filter out those road users with risk behavior at a village or community before entering onto a main road. This operation is very flexible as it can be moved and set up according to the risk location within the village area.

Community Check-point Activity

Outcomes

1. Community consisted of Community Committee, Village Security Volunteer, Village Committee, and villagers set up a safety plan to prevent and reduce road crashes in their community area with an objective of "zero crash, zero injury, and zero death". In addition, they have to agree on a set of road safety rules or charter, which is to be used as a guide for punishment of those community members who fail to comply with the rules. This safety plan has been established in all 2,546 villages.
2. Road improvements that had presented a risk to road users, were improved by installation of speed bump and traffic poles in cooperation with the Highway District, Rural Highway District, and other relevant agencies at 22 spots. The surrounding environment at the area of concern was also cleaned up and installed with road safety promotion signage by the local administrative organizations in the area of Buriram Province.
3. Increased road safety network within all 2,546 villages.
4. Received budget support from regular fiscal budget allocation from relevant organizations and private partnered companies.

Key to success

1. The Governor of Buriram Province has used the BCM-Model and the Peaceful Village Charter of 9 good deeds to concretely and continuously drive road safety work in the province.

2. Integrated cooperation and work by all relevant agencies and sectors, which has cut down overlapping work and created good working relationships among different agencies.

Obstacles

1. The local administrative organization, which is responsible for local governance has not yet realized the importance of road safety issues. Their assistance is still focusing on other issues.
2. People still drive irresponsibly and lack road safety conscience.
3. The Provincial Disaster Prevention and Mitigation Office who is a secretariat to the Road Safety Directing Center is coping with a high workload, and the officer responsible for road safety is often being transferred, which has resulted in discontinuation of work.

Follow up and evaluation

1. The Governor has personally followed up on project progress and provided instruction via Line Chat Application on a daily basis.
2. Road safety working group committee has met regularly on a monthly basis for reporting and follows up on the project work.
3. The Community Committee and the Village Security Volunteer followed up on villagers where warnings were issued for community members who fail to comply with the road safety rules, whereby the fine was collected for repeated violation in accordance to the community agreement.

Recommendation

1. Data management for 3 databases collection can be used as the basis for addressing road crash problems in the area.
2. Increased community participation to motivate local cooperation on road crash prevention and reduction activities by focusing people-centered activity such as capacity building and production of promotion campaign materials should be encouraged.

Changing Risk Spots using Team Power

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Local context

The National Highway Number 23 or locally known as Chaeng Sanit Road is an important route passing through Yasothon to Ubon Ratchathani and Roi Et Province. There are a number of risk spots along the route particularly at a section stretching over 2 kilometers in front of Tat Thong Sub-district Municipality. This section is a 4-lane road in straight alignment without median, and there are offices, school, shops, gas station, and market located on both sides of the road. In addition, most vehicles travel at high speed, which results in severe crashes leading to the loss of lives and financial cost. During 2013-2014, the National Broadcasting Services of Thailand (NBT) Radio Yasothon received the innovation awards from the Thai Health Promotion Foundation. The idea to continue a project in the field of public relations through radio broadcasting along with other measures to promote road crash prevention and reduction work was raised. A brainstorming session by all relevant agencies was conducted to consider risk spots that need treatments, to which everyone had agreed as a spot in front of Tat Thong Sub-district Municipality all the way to Saladeang Intersection for treatment in 2015. This risk spot treatment is an integrated cooperation between different agencies and sectors, and also involved local people to establishing a pilot road safety community to promote sustainability. The community road safety is addressing a number of road safety issues, for example, driving within the legal speed limit, which is promoted through **Slow down Save Your Life** campaigning.

Target area work

The road in front of Tat Thong Sub-district Municipality is densely populated with government offices, schools, and shops. To find out more information on the road crash situation, the local people, community leaders, and relevant agencies from the area were asked about a number of road crashes that happened each month. However, there had not yet been a key agency that seriously and continuously leads a road safety promotion campaign, road crash reduction, or road crash statistics. Moreover, the statistics currently

collected were not specifying data by a particular spot, so it was difficult to plan the work when the needed information is missing. Additionally the area was facing more risk factors from high number of vehicles parking on both sides of the road and people travelling to a nearby market were not complying with traffic rules, which had become a most complex issue to solve by the relevant agencies. Therefore, the NBT Radio Yasothon had conducted a working process according to a cycle of management process for quality control using **Plan–Do–Check–Act** (PDCA) steps. **Planning** was systematically carried out where road crash statistical data and related information was collected before inviting all relevant agencies to a meeting for project planning. **Doing** involved participation of all sectors and local communities where activities were overseen by multi-disciplinary working groups in both provincial and local level. The group consisted of 15 agencies ranging from Provincial Public Relation Office, Provincial Disaster Prevention and Mitigation Office, Yasothon Hospital, Yasothon Highway District, Provincial Land Transport Office, Provincial Police, Tat Thong Municipality, Siam Mackro Public Company Limited – Yasothon Branch, Provincial Public Health Office, Yasothonpittayasan School, Road Accident Victims Protection Company Limited(RVP) – Yasothon Branch, Ban Tat Thong Village leaders, Yasothon Radio Moderator Association, and Daily news Reporters. They had produced six road crash prevention and reduction measures where all 15 agencies and organizations, which had to report their progress on their job responsibilities related to each participating measures to the meeting on a monthly basis. This **checking** process involved;

1. Road safety management measures
2. Public promotion campaign and safe travel measures
3. Community and social measures
4. Serious and constant traffic law enforcement
5. Risk spot treatment on frequent repeated crashes (in front of Tat Thong Market)
6. Emergency medical response service at post crashes

Following the project assessment, a summary report was then presented to the provincial management for future work improvement or further **action** by responsible agencies**.** For project financial support, Thai Health Promotion Foundation and Northeastern – Thailand Road Safety Network provided funds. However, for six road crash prevention and reduction measures, the financial support was drawn from fiscal budget allocation from those 15 participating agencies. All project activities such as live broadcasting on project

debut, road safety workshop training for a target group of 150 people, holding 10 working group committee meetings, and road safety material production and risk communication through five media groups, have been conducted based on five road safety working tactics (Information technology, Multi-disciplinary team, Cooperation, Most risky behavior, and Most cost effective measures). For example, the information technology is concerned road crash statistic data collecting from the local area where the job was given to Huk 31 Rescue Unit (Yasothon Station), Yasothon Hospital, Provincial Public Health Office, and RVP – Yasothon Branch to supply all data and report to other committees at their monthly meeting. All six road safety measures were based on multi-disciplinary action being taken by relevant agencies from both local and provincial levels who all work under a partnership approach. This multi-disciplinary team is not just integrating their work, but also their budget resources, human resources, and equipment where their work was being monitored, followed up, and coordinated by the Provincial Disaster Prevention and Mitigation Office who is a secretariat to the committee.

Images of activities supporting media networks, media material production, and risk communication

Activity picture of the implementation of the measures set by the project team

Productivity/Outcome

Productivity and results of project changes occur both during project and after project implementation where the project evaluation committee found that the road crashes in targeted areas still occur every month, however, the severity and mortality rate has declined. For the area in front of Tat Thong Market, there is no parking on either side of the road, thus, Tat Thong municipality has provided parking facilities and assistants from the Civil Defense Volunteer group. They have placed a concrete barrier and traffic reflective cones along the road ahead of the market, which is a risk area, to reduce the speed of the car, which has helped reduce crash incidents in that area. The Yasothon Police Station has also set up a daily check-point on the road to the target risk spot area. While the Yasothon Highway District has widened the road on that section, which has now completed the first phase and is expected to complete the remaining section once the budget allocation is approved from the central government. As for the Tat Thong Municipality, it has taken the role of intensifying road safety promotion and activities by allocating budget dedicated to road safety work for 2017 budget year. The assistance given to road users has also been duplicated in front of Yasothonpittayasan School, which carried out work by the community leaders, parents, teachers, and students.

The key success learned from this project is that in order to be able to solve diverse road safety issues, the work has to be carried out through five road safety tactics and processes by the integrated force from all sectors. The key success factor is leadership from local community in support of the provincial policy together with a dedication of all working team members from various agencies and organizations who have sacrificed their personal gain for the sake of public safety. However, the team has also experienced obstacles that impact on project success and sustainability, which related to the lack of ongoing project funding support, and the lack of key road safety agency or personal to lead the work after the project has concluded. Thus, it is recommended to constantly develop road safety network partnership and expand it into a sub-district and community level covering all areas such as the area under the local administrative organization, where it is believed that it should play a role in seriously and continuously promoting road safety by proving support on staff, equipment, and budget.

Provincial road crash situation

Mrs. Koonchanaanan Pansiri
Sisaket Disaster Prevention and Mitigation Office

Provincial road crash situation

Sisaket Province has a total population of 1,443,976, and is divided into 22 districts, 206 sub-districts, 2,626 villages, 2 town municipalities, 23 sub-district municipalities, and has 191 sub-district administrative organizations. It covers the area of 8,839.976 square kilometers with number of national highways passing through the province. The main national highway No. 226runs from Nakhon Ratchasima passing to Ubon Ratchathani, and National Highway Number 24 from Chockchai District in Nakhon Ratchasima Province passing through to Ubon Ratchathani Province.. These routes are used for transporting goods to other provinces with an increasing traffic density during long public holiday periods such as New Year and Songkran. The provincial road crash statistics show a high frequency of crashes for the number of population, which 7.59 per 100,000population and is summarized below.

1. 96.74% of the crash causes relate to human behaviors such as speeding, drink driving, running the red traffic light, cutting in front at close distance, and illegal overtaking.
2. 2.19% of the causes relate to the road and environment such as slippery road, damaged road, unlighted road, wet conditions, smoke or fog conditions, and some objects being left on the road.
3. 1.07% of the causes relate to vehicle defects such as failed brake system, loose wheels or shaft, worn out tires, and steering system failure.

In 2015, the Governor of Siseket Province declared road safety issue as a provincial agenda to be worked on all year, not just holiday periods. The task was delegated to the Provincial Disaster Prevention and Mitigation Office together with a network of other relevant agencies. The road safety team is responsible for finding and identifying risk spots and to establish proper treatment solutions to reduce road crashes within an integrated cooperative framework as required under the Provincial Order Number 1145/2558: Appointment of Sisaket Road Safety Directing Center Committee dated on 28 April 2015.

Following a meeting of the Road Safety Directing Center Committee on 30 April 2015 where 20 risk spots from 8 districts were identified based on the type of crash, the surrounding environment that contributing to the crash, and a summary of crash site

investigation was reported by the multi-disciplinary road crash investigation team who visited the target site on 15 March and 28 June in 2016.

Risk Spots in Sisaket Province for Fiscal Budget Year of 2016

District	Risk Spot	Responsible Agency	Quarterly
Mueang Sisaket	1. U-turn in front of Big-C Shopping Mall	Mueang Sisaket Municipality	**1**
	2. In front of Chalermkarnchana University	Sisaket Highway District 1	
Kantharalak	3. Thongchai Motor Intersection	Sisaket Highway District 2	
	4. At curve road in Krachaeng Village area	Sisaket Highway District 2	
Khukhan	5. Kram Village Intersection	Sisaket Highway District 2	
	6. Kudnakaew Village Intersection	Sisaket Highway District 2	**2**
Uthumphon Phisai	7. At curve road in front of Kamphaeng School (226)	Sisaket Highway District 1	
	8. At curve road in Nong Sateng Village area	Sisaket Rural Highway District	
Rasi Salai	9. Kubota Junction	Sisaket Highway District 1	
Kanthararom	**10. Klo Village Intersection** ★	**Sisaket Highway District 1**	
Mueang Sisaket	11. At curve road in front of Phonkho Restaurant	Sisaket Highway District 2	**3**
Kantharalak	12. Para-Military Border Guards Regiment 23	Sisaket Highway District 2	
Khukhan	13. U-turn in front of Tesco Lotus Shopping Mall	Sisaket Highway District 1	
	14. Somboon Village (Khunkhan – Phu Sing)	Sisaket Highway District 1	

Phayu	15. In front of 7-11 Convenient Store	Sisaket Highway District 2	
Mueang Sisaket	16. MCOT Public Company Limited Junction	Sisaket Highway District 2	**4**
	17. In front of Chia Meng Ricemill	Sisaket Highway District 2	
	18. At curve road entering into Nongphai Village	Sisaket Highway District 2	
	19. Volunteer Defense Corps Intersection	Sisaket Highway District 2	
	20. In front of Bankutngong School	Sisaket Highway District 2	

Risk spot treatments required each relevant agency to take their responsibility, for which the treatment was varied depending on the context of the area. Risk spot treatments such as public information to promote driving with caution, warning light installation, and installing street lights, were the responsibility of agencies that are able to manage on their own programmers. However, in some cases, they required specific area of expertise on road engineering, which is supported by the Highway District, and Rural Highway District. For example;

Road engineering for risk spot treatment

No.	Area	Area Description at Present	Road Engineering Treatment	Image of Actual Work	
1	Curve road in Phonkho Village	It is a 2-lane curve road with good condition of road surface and complete with relevant traffic and reflective warning signs. No obstruction to drivers' visibility.	- Maintain regular check-up on safety equipment of the area to ensure that all is properly functioning continuously. - Maintain good and clear visibility by keeping trimming of overgrown trees and bushes. - Put in new road marking. - In middle of budget request for installing the street light in the area.		
2	MCOT Public Company Limited Junction	It is a 2-lane curve road with good condition of road surface and has an intersection at the curve. The road is completed with relevant traffic and reflective warning signs as well as street lights and no obstruction to drivers' visibility.	- Maintain regular check-up on safety equipment of the area to ensure that all is properly functioning continuously. - Maintain good road surface and clear visibility by keeping away from overgrown trees and bushes. - Put in new road marking. - Put in more of a warning sign for the intersection ahead together with an overhanging electronic warning light. - A budget proposal has been submitted for widening the road lane to insert a U-turn.		

No.	Area	Area Description at Present	Road Engineering Treatment	Image of Actual Work	
3	In front of Chia Meng Ricemill	It is a 4-lane linear road with good condition of road surface and have colour marked island. The road is completed with relevant traffic signs and no obstruction to drivers' visibility. However, it does not have street lights.	- Maintain regular check-up on safety equipment of the area to ensure that all is properly functioning continuously. - Put in new road marking. - Install street lights. - It has a proposal plan for making permanent Elevated Island with U-turn location periodically.		
4	In front of Bankutngong School	The road is narrowed down as it reaches the end of a 4-lane road, but with good condition of road surface and street lights. There is an intersection leading to a nearby community, and there is a school and government offices along the area. There is no obstruction to drivers' visibility.	- Maintain regular check-up on safety equipment of the area to ensure that all is properly functioning continuously. - Put in new road marking. - Put in a warning sign for the intersection ahead together with an overhanging electronic warning light. - A budget proposal has been submitted for increasing the road lane, improving the road leading into the community, and installing U-turn location.		

No.	Area	Area Description at Present	Road Engineering Treatment	Image of Actual Work	
5	Thongchai Motor Intersection	It is a linear road with an intersection in the heart of community. The median is an elevated island with dirt fill. The road surface is in good condition, there are street lights, and no obstruction to drivers' visibility.	- Maintain regular check-up on safety equipment of the area to ensure that all is properly functioning continuously. - Put in barriers to slow down traffic when reaching the intersection. - Put in a warning sign for the intersection ahead together with an overhanging electronic warning light at the Median opening from each end. - In middle of budget request for installing the traffic light signal.		
6	Klo Village Intersection	It is a linear road with steep road sides. Vehicles travelling at over legal speed limit with heavy traffic flow of an average of 13,524 vehicles/ day.	- It is a secondary road under the Rural Highway District where a warning sign for intersection ahead is installed. - On the main road, which is Road Number 226, has been installed with speed bumps, electronic warning light, and warning sign for intersection ahead. - The elevated median with color marking was also installed along with barriers at the median opening. This new median comes with an electronic warning light, warning signs, and street lights for the entire length of the island.		

No.	Area	Area Description at Present	Road Engineering Treatment	Image of Actual Work	
7	Kram Village Intersection	It is a 4-lane linear road with an intersection leading to nearby communities. The road surface and street lights are in good condition with clear traffic signs and no obstruction to drivers' visibility.	- Maintain regular check-up on safety equipment of the area to ensure that all is properly functioning continuously. - Maintain good and clear visibility by keeping trimming of overgrown trees and bushes. - Put in more of street lights and warning signs. - It has received budget to improve road to a 4-lane road in 2016 where the traffic light signal will be installed at the intersection.		

The Klo Village Intersection was selected by the provincial road safety network for risk spot treatment during 2016 fiscal budget year. The intersection is a crossing point between Highway Number 226 and Rural Highway Number 3012, which has repeated crashes as shown in the table as follows.

Risk spot road crash statistics at Klo Village Intersection, Du Sub-district, Kanthararom District for the past 5 years (2012 – 2016)

Year	2012	2013	2014	2015	2016
Road crash (incident)	10	3	8	8	3
Casualty (person)	2	0	1	2	0
Injury (person)	8	3	7	6	3

Major cause of the crash was due to the oncoming traffic on the main road (Highway Number 226) where vehicles are travelling at higher than legal speed limit of 90 km/hr. Some often travel at 120 km/hr while the traffic density is as high as 13,524 vehicles per day. Moreover, local people are using a secondary road with little discipline and sometimes even herding their animals onto the main road for crossing.

Work process

The working group committee has decided to conduct a site visit survey by dividing into 2 phases for pre and post risk spot treatment.

Phase 1

- For a secondary road, the Rural Highway District has installed a warning sign for the intersection ahead.
- For the main road, the median marking has been made along with the colored speed bump, warning light signal, and intersection ahead warning sign.
- The nearby communities conducted a community check-point during public holidays to warn local road users when travelling between two roads.

Phase 2

- For the main road, the Highway District spent around 800,000 Bath to install an elevated median, placing a barrier at the median opening, installing the warning light signal and street lights along the length of the median in accord with the traffic engineering practice to promote safety for all road users.

Outcomes

After the first phase of risk spot treatment was carried out, the multi-disciplinary road safety working team then conducted a survey, which found that the number of crashes has been reduced to just one incident. The crash happened on 29 August 2016 when a vehicle hit the median due to a driver failing to comply with the traffic warning sign which resulted in one person being injured. Another survey was then conducted after the second phase treatment was completed, which found there had been no crashes. Road users were interviewed and explained that they had reduced the speed upon approaching the intersection as advised on the warning sign and saw the warning light signal flashing. As for the local people, they had agreed to allocate a specific crossing location for animals, while the local administrative organization carried out a community check point during long holiday season. All of which have contributed to crash reduction in the area.

This risk spot treatment work has been covered and televised nationwide on a TV programmed called Safe Road through Channel 7, which was on aired on 22 September 2016 at 17:40PM. The programmed content is mainly presenting examples that effectively treated risk spots for other provinces to learn from.



Key to success

Supportive factors

- Conducting a community check-point activity allows local people to participate. This promotes cooperation between people and local community leaders. A good example is on the Klo Village Intersection where the Provincial Road Safety Directing Center had recognized the importance of the issue and decided to solve the problem through road safety engineering. At the same time, the Ministry of Transport had also allocated more than 800,000 Baht to complete phase 2 works.

Monitoring and Evaluation

The monitoring and evaluation has been carried out from April to July, 2016, which involved not just site assessment, but also an interview with people that were using the road. The result was then compared between pre and post treatment implementation.

Obstacles

The province has limited budget to immediately tackle the problem so the solution has to come from cooperative work of relevant agencies and sectors with budget support from the central government.

Project expansion and continuity

- Apply the local participation between public and local leaders to other area of Sisaket Province in implementing risk spot treatment.
- Promote publicity within a road safety campaign and training from the road safety center in both local and district level for the people in the areas in a continuous manner to raise awareness of safe road using behaviors and activities.

Recommendations

Allowing the local leaders to take part in solving risk spots in the community area whereby the officer on duty can advise and provide information to people from the community who are known to them.

- There should be an integrated annual road safety action plan to support the provincial road crash prevention and reduction policy.
- Using data and information for road safety activity planning and public promotion campaign.
- There should be ongoing working group meetings.

Because a Road Crash (in Roi Et Province) is not about Fate

Miss Supaporn Tatsanapong
Roi Et Public Health Office

Provincial Situation

Roi Et Province is located at the heart of the northeastern region where there are number of national highways dissecting the province en route to nearby provinces such as Ubon Ratchathani, Mukdahan, and Nakhon Phanom. Roi Et has been experiencing a high number of vehicles both during normal times and during long public holidays. As a result, the road crash fatality rate for Roi Et in 2014 is 27.59 per 100,000population, which is the third highest leading cause of death apart compared to cancer and heart disease. This has prompted Mr. Anusorn Keawkungwan, the Governor of Roi Et, to announce the "seven road safety measures" policy in order to become a "safe and healthy city". The mechanism to drive this policy consists of the establishment of a provincial road safety directing center steering group committee, the establishment of road crash prevention and reduction center in all 20 districts, and local administrative organization road safety directing center in accord with the instruction of the Prime Minister's office on Road Safety 2011. However road crashes have not reduced.

Mr. Chayan Sirimat, Vice-Governor, had appointed a sub-committee on risk spot data collection and analysis, for which the outcome was reported at the provincial meeting. The results showed that the key agencies responsible for road crash prevention and reduction (five E road safety network agencies) have been tackling road safety all year round, but they were still lacking connectivity and participation of key stakeholders or local communities. Thus, their road safety activities had carried little weight for influencing road safety issues. Thus, the group has come together to discuss about the issues at meetings, through a mobile chat group and email, and at a get together event in an informal setting to share information and expertise. This type of meeting was given budget support by the Thai Health Promotion Foundation, Thailand Road Safety Network, and Road Accident Victims Protection Company Limited (RVP) all with a mutual concept in mind that "a road crash is not about fate", but rather a preventable event whereby reducing risk factors contributing to the crash can be achieved

Working Process

By presenting road crash data based on the integration of three databases risk spot identification has been achieved. The advice and actual treatment is then carried out by the responsible agencies before presenting the outcome to the committee at the next meeting. The sub-committee on road crash data targeted schools. The directors of the Primary Educational Service Area Office 1 – 3 and the Secondary Educational Service Area 1 were invited to the meeting to present road crash data and information related to schools within their responsible area to the sub-committee. For road crash prevention and reduction through the organization's road safety measures, Nuemueang Sub-district Administrative Organization has adopted the 100% helmet wearing measure, while a village road safety charter was issued by the community in Nong Hin Sub-district of Mueang Suang District. This type of work was combined with school road safety activities that were supported by RVP and 100 helmets were also given to participating organizations by the Provincial Land Transport Office. All, road safety work involved multi-disciplinary agencies and sectors.

Product/ Outcome

Product

There is a road safety directing center and road safety action plan in all 20 districts as a mechanism to drive road crash prevention and reduction work. It is also served as a platform for integrating work and budget for road safety activities, both from a regular budget and additional support budget from the district, provincial, and others from different sectors.

Outcome

Following the announcement by the governor of Roi Et, every government agency must establish road safety measures with clearly defined penalties when failing to comply with the measures. In 2015, the number of people being injured in road crashes was 7,848 people and 7,935 people in 2016. Although the number of injuries did not decrease, the number of fatalities from road crashes has fallen from 223 in 2015 to 197 in 2016 (October, 2015 – July, 2016).

- Road crash prevention and reduction activities being conducted are indicated in the table.

Agency	Activity	Budget
Provincial Disaster Prevention and Mitigation Office	- Establish Provincial Road Safety Directing Center and have a meeting each month. - Establish District Road Safety Directing Center in all 20 districts and have a meeting each month.	- 400,000 Baht budget received from the Department of Disaster Prevention and Mitigation
	- Establish Provincial Road Safety Directing Center and have a meeting each month. - Establish District Road Safety Directing Center in all 20 districts and have a meeting each month. - Signed up an MOU with all relevant government agencies and educational institutions.	- 150,000 Baht budget support from Thailand Road Safety Network
Nuemeang Sub-district Administrative Organization	- Promote organization's road safety measures	- 189,000 Baht budget support from Thailand Road Safety Network
Provincial Land Transport Office Road Accident Victims Protection Company Limited	- Support two multi-disciplinary team meetings. - Risk spot treatment based on tri-databases analysis. - Support on helmet supply to organization that establish road safety measures. - Support two multi-disciplinary team meetings.	- 10,000 Baht

Agency	Activity	Budget
Provincial Public Health Office Roi Et Hospital Roi Et Bureau of Maintenance/ Provincial Rural Highway Office	- Support on helmet supply to organization that establish road safety measures. - Public announcement of organization's road safety measures. - Randomly survey on helmet wearing and reporting results every 3 months. - Establish tri-database and presented information at the provincial road safety directing center's sub-committee meeting. - Establish organization's helmet wearing as road safety measures, and sell helmets at lower price at hospital. - Road surface repair - Improve road side environment for better visibility. - Risk spot treatment based on tri-databases analysis.	

Key to success

Supportive factors

The governor has emphasized the importance of road crash prevention and reduction by declaring the province to be free from road crashes, which has prompted the government agencies to set up their own road safety measures. There was a subcommittee on road crash data management, which has made the meeting become more focused on road safety where there was enough time to present and analyze the information that can lead to the solution. In addition, Ministry of Interior had issued an order to establish a road safety directing center at the district level and the local administrative organization level. This has led to a shift in road safety work to take more preventive steps by correcting factors that contribute to road crashes based on the existing local context.

Conditions

The establishment of district road safety directing center was carried out across the province through the provincial order at the same time. However, it lacks the driving force to continuously operate throughout the year rather than just being active during a long public holiday season. Many districts do not concretely have operational processes due to a lack of knowledge and understanding. Thus, the working process should be clearly explained as well as establishing activities along with monitoring and evaluation. The pilot district should be selected based on its readiness to ensure that it will yield a good outcome and become a model example for others to learn from. The information from data that is presented at the provincial and district levels should be shared with the local community when treating risk spots. In doing so, it will enable the locals, both in district and sub-district levels, to prevent the crash by addressing the issues and causes at both district and sub-district levels. Additionally, there should be a way to present factors that are unable to overcome by the local community to the Provincial Road Safety Directing Center for further consideration of any assistance.

Obstacles

The District Road Safety Directing Center is lacking a mechanism to drive road safety activities, so there is no continuous operation throughout the year. Some district and sub-district administrators are lacking knowledge and understanding on an operation of the road safety directing center in a sub-district level, thus, the center has not yet been functioned.

Monitoring and Evaluation

No project monitoring and evaluation is carried out by the District Road Safety Directing Center.

Project expansion

Select a district that is ready to operate on road safety activities as a pilot area where requiring at least two sub-district administrative organizations in the district taking part in the district work in order for them to be able to carry out a mechanism to drive road crash prevention and reduction work in the district effectively. An excursion or site visit should be undertaken to learn from other districts and sub-districts road safety directing centers that effectively manage road safety activities. This is to promote knowledge sharing and better understanding of the operating system and process involved which could lead to making changes to the attitude and help determine the best mechanism for their district. For

example, to have a meeting every month, and present work progress at the provincial road safety directing center. In addition, to establishing a sub-committee at the district center level to facilitate the operation, and help mobilize work in pilot local administrative organization areas.

Recommendations

By having all districts in the province mobilizing work may affect the ability to track work progress and adequate support. There are some districts that are specifically dedicated to work, and can be modeled to convey to other districts. In addition, the provincial sub-committees should be appointed as mentors to support the District and Sub-district Road Safety Directing Center, and should appoint a sub-committee as a working team to drive the work in district level.

Community Road Safety Management through Local Participation in the "Pho Yai Model"

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Local environment

Pho Yai Sub-district is located in Warin Chamrap District of Ubon Ratchathani Province. It is a semi-urbanised community with rural community values that are still embedded within the community. The community has been affected by the consequences of road crashes but through its adherence to tradition, culture and traditional northeastern living style of being generous, helping each other, and being ready to work together for the benefit of the public, a positive factor has emerged that contributes to successful work.

In current society conditions, the penetration of capitalism that flooded into the community has made it become more prosperous materially and turned it into a consumer driven society. All of these have been accompanied by various social impacts on people's way of living in Pho Yai Sub-district where one of which is road crashes. When road crash data and statistics are collected, it is found that road crashes in the community is mainly caused by drink driving behavior. Ironically people become drunk when participating in cultural and traditional events particularly in New Year and Songkran Festival.

Based on these findings, the community has come up with solutions to the problem, using the foundations of community engagement to drive the operation. This consists of the analysis of community problems, and community problem solving planning by the community and for the community. This is carried out without having to wait for policy from other agencies to issue orders since problems in the area are well known by the local people who understand and have the most correct and sustainable solution to the problem. The villagers in Pho Yai Sub-district are also a supportive community who adhere to the traditions and culture on helping each other, which is based on strong believe in religious institution. The community is also gives importance to local education system and has its strengths for being a training ground of students from health education institutions like Boromarajonani College of Nursing Sanpasithiprasong and Ubon Ratchathani University. This is an "off-the-shelf" organization that empowers the community to tackle road crashes in the

area where community meetings are supported by the Pho Yai Sub-district Administrative Organization's budget and venue unlike past operations where instruction was handed down by the central government agency without cooperation from villagers who had no ownership to tackle problems.

From the context above, Pho Yai community led by a group of Sub-district Headman and Village Headman has cooperated with another four agencies consisting of Boromarajonani College of Nursing Sanpasithiprasong, Pho Yai Sub-district Administrative Organization, Pho Yai Sub-district Health Promoting Hospital, and Ubon Ratchathani University. Their cooperation mobilized road safety activities through a 3-step strategy of "establishing road safety conscience, truly understanding road crash problem issues, and cooperatively solving problems". This 3-step strategy is integrated in the mutual exchange of learning between the project team and people at the community hearing session at the village and sub-district levels. A community hearing is conducted in every village with the content focusing on acknowledging road crash problems through an authentic learning approach where a real life experience is shared and reflected upon by those who are directly impacted by the consequences. The experience and lesson learned, and reflection is the summarized for further analysis.

Finding risk factors for community road crashes through a participatory brainstorming process is based on evidence-based learning principles, and proposes possible ways to solve community road crashes in accordance with the Appreciation Influence Control (AIC) guidelines.

Selected 10 community representatives consisting of 2 representatives from governing body (Village Headman/Sub-district Headman), 2 representatives from local development administrative body (members of the municipality council), 4 representatives from Village Health Volunteers or other volunteer groups in the community, and 2 representatives from ordinary community members, to attend the community road safety management training.

Organized a two-day training workshop based on the achievement for a total of 130 people who are representatives from all villages to learn about community-based disaster management, where there is an exchange of life lessons and possible solutions to the problems that are received from the community hearing session that has been synthesized for guidelines to manage community road safety activities within the community context as a whole.

A kick start in a sub-district level is organized through the cooperation between all community leaders, municipality/sub-district administrative organization, primary and secondary

schools, local temples, Village Health Volunteer, community groups, and the general public. Activities include;

1. Declaration of the sub-district agenda on sustainable road safety management.
2. Presentation of development routes from village to sub-district level.
3. Signing of Cooperation (MOUs) between agencies and organizations in the community.

Outcome

The change involved the establishment of road crash data sets, which includes 9 risk spots, factors/severity of the crashes that are caused by driving whilst intoxicated and speeding over the legal limit. The community recommendation for sustainable solutions is to form an MOU with each community and submit a proposal to Pho Yai Sub-district Administrative Organization to set a budget for road safety work at a sub-district level.

The successful implementation of the Pho Yai model through a 3-step strategy is considered to be due to the fact that its solution to the problem has originated from the local people's participation and understanding of the existing road safety issues. Thus, by integrating the cooperation with the educational institutions it has strengthened the local power to change and solve problems in a sustainable way. It has also become a model for other communities for learning and is adaptable in order to reduce damage and lose caused by road crashes even at the national level.

Establishment of Organisational Road Safety Measures to Promote 100% Helmet Wearing by Nuemeang Sub-district, Roi Et Province in 2016

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Nuemueang Sub-district is located adjacent to the Mueang Town Municipality, so it is part of an urban city society with a high volume of vehicles passing in and out of the area on a daily basis. Thus, high road crashes are expected and well reflected in its road crash statistics in the past three years where there are 159, 120, and 329 crashes respectively (2012-2015). The majority of the crashes involve motorcycles with riders aged 15-29 years. Therefore, the Nuemueang Sub-district Administrative Organization together with the Road Accident Victims Protection Company Limited (RVP) and other road safety network agencies such as Provincial Land Transport Office, Provincial Disaster Prevention and Mitigation Office, Provincial Police, Provincial Public Health Office, Big-C Shopping Center, and Pairoj Wittayalai School instigated a project on helmet wearing promotion in a pilot organization. At the initial phase, three organizations had participated and they consisted of Nuemueang Sub-district Administrative, Big-C Shopping Center, and Pairoj Wittayalai School. The assessment criteria were set by the RVP and other road safety network agencies. The evaluation outcome was presented to the executive management of the organizations. Those managers were very satisfied with the results and provided their support to continue and maintain the road safety measures. The Governor has given applause to the project team and partners, and asked to have the same type of project at Nuemueang Sub-district Administrative Organization expanded into other areas to enjoy the same fruitful outcome of change in helmet wearing behavior among staff in those three organizations where there have been no crashes in the past year.

Aim

1. To promote the establishment of organization's road safety measures to promote 100% helmet wearing for motorcycle riders working in the organizations located in Nuemueang Sub-district and other areas that are interested in the project.
2. To reduce number of head injuries and death due to motorcycle crashes of personnel in participating organizations.

3. To look for a knowledge body to establish organizational road safety measures, and turn it into a policy to propose to relevant agencies.

Target Area

1. Nuemueang Sub-district Administrative Organization
2. Big-C Shopping Center –Roi Et
3. Pairoj Wittayalai School
4. Trax Intertrade Co., Ltd. (Changhan District)
5. Thai Permpool Homeshop Retail Company
6. Mueang District Public Health Office
7. Roi Et Hospital
8. Roi Et Provincial Public Health Office

Performance Indicators

1. Five organizations to establish 100% helmet wearing as organization's road safety measures.
2. Half of the total participating organizations have their employees wearing helmets 100%.
3. Half of the total participating organizations have reduced motorcycle crash incidence, injury, and casualties in their employees compared to the previous year statistics.
4. Create knowledge kits and a body of knowledge on organization's 100% helmet wearing measures establishment.

Results

A. Results according to indicators

The outcome has met all target indicators where 100% helmet wearing measures has been established in five pilot organizations, which cover not just a shopping center with the use of 200-400 motorcycles a day, but also a local governance agency like the sub-district administrative organization where both have already been certified to a national standard as a role model agency. The project expansion to a local community level has already begun which includes schools as the next target group. The Governor has taken interest in this project work and given instruction to expand the work into other sub-districts to cover the entire province. When looking at the project evaluation after one year, there has not been any serious injury or death from road crashes at all.

B. Other results exceeding expectation

Mr. Anusorn Kaewkungwan, the Governor of Roi Et, has issued a policy to have all government agencies become a 100% helmet wearing zone together with an official record on cooperation, monitoring and evaluation process, and plan for project expansion in schools.

Knowledge Kits to Create Organizational Measures for Helmet Wearing Promotion where "knowledge is expanded to driving the organization road safety measures"

The five road safety tactics and working processes mobilization involved;

Working process: knowledge, attitudes, situation, mandatory insurance coverage, disciplined driving, law enforcement

- **Method**

  By allowing all stakeholders from all relevant levels to participate in every process, has given the opportunity for good cooperation within the organization. This has to be reinforced by providing knowledge training and information sharing, which includes practical experiences such as visiting friends at a hospital, enforcing penalties on those who violate the agreed rules. As for teamwork, a regular meeting has to be carried out, while data and information has to be presented at every opportunity and that all project work responsibilities should be integrated into regular duty work. Though, for corporate organizations, the approach to road safety work was to deem road crash casualty and injury as something that adversely impacted the organization's productivity, thus road safety measures are a direct policy from the senior management who value their employees' safety. This can be achieved by taking the following steps;

  1. Present data impacts caused by a motorcycle crash and success stories of those three pilot organizations at the provincial monthly meeting and at a road safety mobile team meeting led by the police, Provincial Disaster Prevention and Mitigation Office, and Roi Et Hospital in an attempt to gain support from those policy makers.
  2. The Governor has taken up road safety as a provincial safety policy and issued an order for eight agencies including schools both in primary and secondary levels to implement 100% helmet wearing as an organization's road safety measures. Through this work, all eight organizations have to collect road crash data and helmet wearing rates both pre and post project implementation and present all information at the committee

meeting once a month. The safety measures, rules, and charter were then established with an action plan for an organization's management to consider and adopt. After the management has given a green light to implement the measures, a survey on number of motorcycles, mandatory insurance coverage, and road crash data from tri-party sources were conducted. The working principle for this road safety measure is based on safety promotion, creating awareness, and inspiring people.

3. Jointly set up a forum to link public policies and budgets to all public and private sectors, including the Department of Rural Roads and Land Transport Department.
4. Work is mobilised through constant participation, knowledge dissemination, information sharing, agreed rules and measures within the organization. What has been found is that;
   4.1 Charter is defined and more network partners are included.
   4.2 Promotion of safety knowledge and related news in the factory.
   4.3There is a process of following up, controlling, and checking such as in the case of Big-C Shopping Center where violators were directed by the Human Resources Department.
   4.4 Increase and expand the road safety network in sub units of the organization or factory by advocating policies, helmet wearing zones, installing campaign signs, public campaigning in the community and in the organization. For those who fail to comply with the rules, they are subject to penalties where their behaviors were recorded and attitude was improved through a discussion to learn more on the cause of such undesired behaviors. Another activity was to have all related information such as the impact of non-compliance and the benefits of following the rules shared with all 1,800 employees at the monthly meeting. Executives act as role models, and provide support on activities such as establishing a co-op for helmets, having the external agencies involved to service the employee that did not have a mandatory insurance coverage, and sell helmets to employees.

Outstanding Work in the Organization

1. Knowledge training for Heads of security team.

2. Apply the C-TPAT safety standards system for private organizations to control and check on routine work.
3. To enhance the organization's capacity and network expansion internally. The use of equipment like Alc for alcohol testing on delivery drivers, whereby the work has won an award in both provincial and national levels. For school road safety work, The Pairoj Wittayalai School has carried out a 100% helmet wearing promotion project due to high road crash incidences. The work involved making safer environments by improving parking management, sign installation, road marking, helmet fund, road safety school charter that linked with students' discipline scoring.

The provincial working team, consisting of Provincial Disaster Prevention and Mitigation Office, Provincial Land Transport Office, RVP, and Nuemueang Sub-district Administrative Organization, has provided their assistance in number of ways. For example, school learning and teaching activities, being a mentor for the organization on road safety measures establishment, advising on drink driving activities, and taking part in monitoring and evaluation process. From a lessons learned session and the evaluation outcome conducted by the committee and the mentor team, the results showed that seven out of eight organizations have passed the evaluation. The one who failed was due to the lack of interest from the executive and heads of departments, and high turnover of staff that were a focal point which resulted in inconsistent work.

Recommendations

Road crash prevention and reduction work is a mission that requires a lot of resources. It involves cooperation from multi-disciplinary networks, road safety awareness promotion among road users both young and old, and behavioral change on risk behaviors. Therefore, it is recommended to have road safety curriculum being produced and included in school learning and teaching from kindergarten up to tertiary level where it should be included as a mandatory subject with credit and merit points. Moreover, law enforcement should be carried out strictly particularly on driver licensing in order to prevent underage riders and unqualified drivers from operating the vehicles, which could potentially be harmful to other road users.

The establishment of a 100% helmet wearing zone for the organization whose employees are travelling by motorcycles is another way to reduce injury and death from road crashes.

Community Road Safety Cooperation of Non Non Sub-district in Warin Chamrap District, Ubon Ratchathani Province

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Non Non Sub-district has National Highway 2178 passing through its area. Thus, there is high volume of vehicles as well as road crashes for the past year. The majority of fatal crashes involve motorcycle riders who are not wearing helmets and ride in the wrong lane. In the past year there were 3 casualties, 5 were seriously injured, and 13 were minor injuries.

For this reason, together with the responsibility required by the Sub-district Administrative Organization Act Section 67 (4) on Disaster Prevention and Mitigation, the Non Non Sub-district Administrative Organization (SAO) has conducted meetings with community leaders to establish the cause of the problem and its solution.

The working process is;

1. The use of community leaders as driving mechanism with the help and support from Ubon Ratchathani University, Provincial Public Health Organization, and Road Accident Victims Protection Company Limited (RVP) to strengthen road safety and reduce road crashes.
2. Together, help eliminate risk spots, disseminate road safety knowledge, and first aid training for people from 12 villages, government officers, teachers, students, and Kaona Fresh Chicken Co., Ltd employees (7,241 employees). A sub-district public hearing was carried out to understand the problem and issue, identify the cause as well as solutions in each village. In addition, search for risk spots and treatments in sub-district areas covering community, schools, and Highway 2174 continuing from the work in 2015. RVP is acting as an advisor to leaders from 12 villages and a private shuttle bus company where they were brainstorming for risk spots and treatments in a village area, main road, and secondary road before making a map to reflect all information.

- Organize a meeting to set a platform e to establish social rules, which led to the implementation of six road safety measures. The measures consist of drink do not

drive, no driving on the wrong lane, wearing helmets, checking vehicles before driving, no driving on the road island, and no overloading with riders on a motorcycle. This set of rules was issued on April 29, 2016 with an agreement in May and publicity in July before being implemented.

- Provide road safety knowledge and create roles for community leaders with a team from Warin Chamrap Hospital. The role of community leaders and three volunteers from each village is to monitor and warn their community members of unsafe driving behaviors.
- Collect relevant information, set up charter, provide helmet loan service, compose risk spot mapping, and survey villagers' vehicle use (i.e. 60% of motorcycles were used by Kaona Fresh Chicken Co., Ltd employees). There is a radio center located in Non Non Sub-district Administrative Organization Office to report on road crash incidents and statistics.
- Distribute information to the public through a community radio programmed and also ads spot in the community to create awareness. This includes other public information distribution of materials such as road safety promotion signs, stickers, leaflets where road safety measures were put on a billboard in every village.

Role and responsibility of network members

1. The provincial working group committee provides support and knowledge.
2. Ubon Ratchathani is an advisor
3. RVP to support on organization's road safety measures.
4. Police station

Products

1. There are local road safety leaders and volunteers from 12 villages consisting of Road Crash Reduction Volunteer, Chief Administrator of the SAO, Sub-district Headman, SAO members, Village Headman, teachers, and Child Development Center staff.
2. 70% of risk spots have been treated.
3. Road safety networks across sectors have been formed.

Change agents at sub-district level

- People participated in risk spot finding and social measures establishment.
- Road safety network partners and community leaders.

Medium term

- The SAO integrate road safety budget with annual budgeting to treat risk spots and support social measures, and the work being carried out is linked to employment performance evaluation.
- Kaona Fresh Chicken Co., Ltd has linked the road safety measures with disciplinary rules. On the other hand there are more road safety leaders and volunteers, and road safety radio programmed operation by the radio center.
- Widen network partnership, sharing knowledge on roles and working process, and truly have a clear leader in charge of road safety work.

Social measures

The Non Non SAO organized a brainstorming activity to establish social measures to be used as a set of road safety rules such as helmet wearing and other traffic discipline. This helps promote cooperation from all relevant local agencies, schools, village leaders and people to get involved in road safety. Another aspect is to have the rules agreed and accepted by the local people. The activity took place on April 29, 2016 at Ban Khon Sai Temple, Village Number 3, Non Non Sub-district where the social measures are as follows.

1) Prohibit disruptive driving direction (driving on the wrong lane)
2) Both motorcycle riders and passengers wear helmets.
3) Drink do not drive
4) Check up on vehicle condition before use
5) No driving on prohibited areas such as crossing the road island.
6) No illegal overloading of the number of passengers (three people are not allowed on a motorcycle)

Results

Strength

- Local agency leaders (supportive): SAO, and sub-district council members.
- Community leaders (main): Sub-district Headman, Village Headman, Assistant Village Headman, Sub-district Physician, and peace keeper assistant (age over 60) from all 12 villages to participate in the activity and attend a monthly meeting to promote cooperation.
- District representative: Deputy District Chief to coordinate between different agencies from district level and sub-district level.

Evaluation

The evaluation of the project implementation was based on behavioural change in road users. By social measures, people regard it as a safety measure for themselves and community leaders are a good role model.

Community Model and Project Expansion

Mrs. Jiraporn Pathamyo
Vongchavalitkul University
Phuangthong Adisaidaytrin
Thachang Sub-district Municipality: Ubon Ratchathani

In 2014, Tha Chang Sub-district Municipality together with the community carried out a project called “Tha Chang Road Safety Network Partnership Development”, which received 3,000,000THB budget support from Thai Health Promotion Foundation. Through this project work, an integrated network partnership was formed to drive road safety activities to sub-district and community level to achieve effective and sustainable outcomes. This has motivated community awareness and awakened community vigilance in preventing and reducing road crashes, which has strengthened community road safety and become an example for others to follow. This encouraged competition that led to the expansion to other sub-districts for minimizing road crashes in their area. In 2015, the road safety project work was expanded into Tha Chang Sub-district Municipality, which was again supported by the Thailand Health Promotion Foundation with additional budget from the local administrative organization and others from government and private sectors. The project expansion on the operational model and introduction of road safety culture of an award-winning village was expanded into school work in kindergarten, primary, secondary, and private operators to createa “Change Agent” who takes ownership of road safety projects.

Human resource building and networking to promote road safety for increasing the quality of life

By inviting people to become part of a working group it has promoted collaboration and created good relationships between the government agencies, who together lead the project, along with the public and private sectors. Additionally, it has enabled the team to get to know the needs and wants of the target group and be able to respond to their needs as well as receive suggestions. Therefore, more network partners have been sought which has consisted of the following.

1. Thachang Sub-district Municipality
2. Kham Nok Plao Sub-district Health Promoting Hospital
3. Kham Pho Sub-district Health Promoting Hospital
4. Sawangweerawong Hospital

5. Sawangweerawong District Police Station
6. Banthachang School (Nakhonratchasima Highway District Songklo)
7. Banbuatheng School
8. Banbuata School
9. Bankompokokkong School
10. Siriubonwan School
11. SawangweerawongNon-Formal and Informal Education Office
12. Ubonratchathani Media Reporter Association

Change results

Risk spot identification; partner agencies and the multi-disciplinary team work together to determine the direction of road crash reduction work in Tha Chang municipality, where the information on major problems and risk spots is provided.

Risk Spot	No. of Crash	Consequences
Main road		
Intersection in front of Banthachang School	10	Serious injury
Ubon Ratchathani Land Development Station	5	Serious injury and one casualty
Intersection near PTT Gas Station	5	one casualty
Intersection near PT Gas Station	4	Serious injury
Under the interchange road at the entrance to Village Number 4, Banbuatheng Village	4	Serious injury
Bypass Road near Banbuatheng School	2	
Entrance to Village Number 5, Banbuata Village	2	Serious injury
Secondary road		
The entrance to Village Number 20, Banhong-o Village near the Thachang Reservoir that links to Village Number 6	5	Minor injury
Intersection at Village Number 8, Bankhampho Village	5	Minor injury

Training activity; helps educate road safety network agencies and youth groups in primary and secondary schools to promote road crash reduction.

- Road safety network team provides technical knowledge of good public relations, traffic rules, and first aid.
- Basic traffic rules and traffic directing service training for youth groups from five schools consisting of Banthachang School, Banbuata School, Banbuatheng School, Bankompokokkong School, and Siriubonwan School by Sawangweerawong District Police as a main trainer.

Study tour

At Tha Luang Hospital, 60 participants attended a study tour. The collaboration across all professions was a major essence in tackling road crash issues. It helped bring out knowledge, which can be adapted to the developing measures in mitigating major risks in the community. It has also motivated, located or created a community learning resource to turn it into a road safety community based on knowledge synthesis.

Road safety activity

"No fatigue, no drinking, no calling when driving" activity with 200 participants;

- Provincial disaster emergency training for 2016 fiscal budget year by Provincial Disaster Prevention and Mitigation Office, took place on February 17, 2016 at Banthachang School. The given scenario was that two trucks had collided and caused chemicals to leak. The training involved Ubon Bio Ethanol Group and a rescue team from 1669 Emergency Team to perform patient transfer. The training was commanded by the Sawangweerawong District Chief and observed by Mr. Kanchat Tunsatiean, Vice Governor of Ubon Ratchathani Province.
- Sawangweerawong District road crash emergency training for multiple road crashes, took place on March 7 and March 23, 2016 at Sawangweerawong Hospital. The training result showed that the operation in handling the situation was very well received by the general public particularly children and youth who took great interest in observing the event.

Traffic School Volunteer Activity; There were 208 participants who learnt to analyze risk spots to form safety measures that can effective in reducing risks in schools, and

producing school learning materials such as speed control, and traffic direction design and practice.

Village Traffic Volunteer Activities; By having an activity to grow back the forest as a fence between the road and the river, and installing rails on the bridge for road users to clear a location to prevent danger.

Slogan contest activity; To motivate students from all five schools on helmet wearing, this activity received high numbers of students participating.. The award was then made to cover all schools in municipal area.

Change agents

Key to success

1. Sub-district Administrative Organization is a leading change agent.
2. Cooperation between police, schools, Non-formal and Informal Education Office, and Sub-district Administrative Organization to promote road safety for youngsters' future.
   - **Police;** Take pride that children have knowledge on traffic rules, which would be useful in their daily life and even able to share it with their parents.
   - **Schools;**20 traffic signs were produced and used in schools within the existing budget where there was not enough to conduct other activities unless some schools had received budget from other sources. Though, the road safety learning and teaching activity was integrated into school subjects such as Boy & Girl Scout. The school directors had also submitted a proposal to the Thai Health Promotion Foundation to request for project budget support.

- **Non-formal and Informal Education Office ;** where the police focused on population aged 15-59 who had already completed grade 6, where schools supported the equipment and signs.
- **Mentoring team;** based on the previous road crash data, there was no reduction on the statistic due to increasing number of vehicles on the road with higher road casualties. Thus, a new approach was to promote road safety and to prevent road crashes in ***children***, and reducing risk, treating risk spots, and promoting road safety measures in the work place for ***adults***.

Observation

- ***Post ASEAN Economic Community (AEC) implementation:*** Following the implementation, there will be more vehicles from neighboring countries that are travelling with speed on better road conditions. However, traffic volume will be intensified with vehicles transporting goods between Thailand and Lao PDR. The context of the local area will be changed and so as the road designs where there would be a long highway without traffic light signals.
- There is a risk spot on a route with interchange road where employees were riding recklessly.

Factors contributing to success

1. Strong leadership by the head of the agencies and working team who operated under the concept of "leaders do first", while information is shared and issues are discussed continuously both formally and informally.
2. The information obtained from the analysis is used as a guideline for the project operation.
3. There is a process to motivate in the government, private, and community sectors to follow the project road map, such as conducting a joint risk spot investigation, convening a working group meeting, knowledge exchange training, as well as monitoring and evaluating the project.
4. There is budget support from government and other related agencies, which makes the process go smoothly.
5. The participating agencies are encouraged to present the progress as well as obstacles of project implementation where good practice can be applied in other areas.

6. Create a participatory process in all project activities where the District Chief and District Public Health Office are leading agencies under MOU agreement to carry out official activity. For example, there was emergency training in the case of multiple crashes that was conducted at a local school. The coordination was done directly with the school principal with cooperative work involving a local hospital, five other participating schools, and Non-formal Education and Informal Education Office taking the role as evaluating team.

Monitoring and evaluation

1. Knowledge of the participants whereby 60% of them have to pass the test (total of 100 participants). The results showed that 70% had very good knowledge on traffic rules and road use (scoring at 80-100), 24% had good knowledge (scoring at 60-79), and 6% had fair knowledge (scoring at 50-69).
2. Highly satisfied
3. The helmet wearing rate has increased to no less than 70%.
4. More than 50% increase in youth traffic and community traffic volunteers, where the target was set at 100 volunteers from five schools, but after the project implementation, the number has jumped to 208. While the target number of the community traffic volunteers was set at 10 from each village, so the total number was 200 from 20 villages where more than 200 of them had participated in the activity.

Obstacles

1. The road safety situation assessment was not in line with the plan despite receiving funding since October 6, 2015. However, there was confusion over the withholding tax audits where the coordinator was not clear and decided to delay the project. The timing was not applicable since it fell into a school break, so the activity was automatically put on hold resulting in project implementation being delayed.
2. Tha Chang Sub-district is housing a new tourist attraction known as ALEXANDER, a film location, which was opened on November 20, 2014. This has prompted the local people to be more aware and change their road using behaviors to accommodate the situation and being prepared for an increase in tourists. This requires an ongoing public relations effort to encourage the local people not only becoming a good host, but also a good emergency volunteer network in case of crisis both on land and

water (in case the area is flooded by Mun River). This involves collaboration with the 22nd Military District, Sawangweerawong District Police, and local community leaders.

Recommendation

1. Risk spots in the community have to be treated to reduce repeated road crash incidents at the same spot.
2. People in the community need to take part in road crash prevention and reduction work, and help police in notifying the culprit traffic offenders. The community members can help volunteer on police traffic directing service.
3. Expand the network and project working process to other communities.
4. Resources in the area, both personnel and budget are an important capital, so there should be persuasion for more to join the network.
5. Communities should learn to collect and analyze road crashes data and information.
6. There should be academics to support on knowledge building on risk spot treatments that are appropriate for people in the community and local agencies.

Risk Spot Treatments by the Road Safety Network in Kalasin Province

Pol. Lt. Col. Sorrawich Phoowasesnont, Kalasin Provincial Police

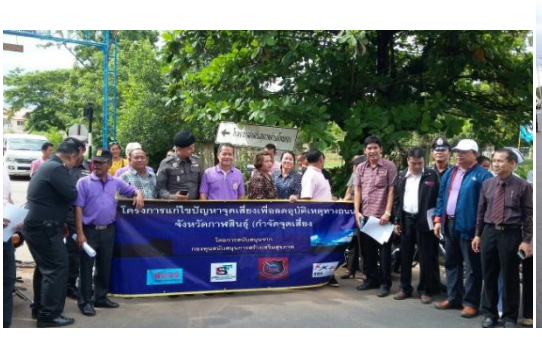
In 2015-2016, Kalasin Province had conducted a road crash prevention and reduction project. The project was managed by Kalasin Provincial Road Safety Directing Center and implemented through a multi-disciplinary road safety network partnership with Provincial Disaster Prevention and Mitigation Office as a secretariat to deliver road safety work using the 5E working approach.

Based on the 2013 road crash statistic, there were 172 crashes resulting in 105casualties and 178injured. In 2014, there were 217crashes, 128 casualties and 181injured. The information showed that some of the crashes occurred on the same particular spot on the road, which is referred to as risk spot. Therefore, a working committee was appointed, which was chaired by Deputy Commander of Provincial Police and Deputy Director of Provincial Highway Office as Deputy Chairman. The working committee is responsible for road crash investigation on the risk spot with repeated crashes and synthesizes information on all components for an in-depth analysis on causes in order to propose countermeasures in both short and long term contexts.

Working process

The working group meetings in local/district/provincial level were held for a better understanding of the role and responsibility, and to set out a work plan based on the previous road crash data analysis. The working group from all levels then decided on the risk spots that required urgent attention, set out the working approach, and conducted a site survey and examination.

On October 6, 2015, 40 members of joint working group committees from provincial, district, and community levels conducted a survey on risk spots, traffic situation, and road user behaviours at Hamhae-Pontong Intersection on Kalasin – Somdet Road in Mueang Kalasin District. There were five crashes in 2015 resulted in 7 people being seriously injured, and 3 were killed. Another spot was at Taohai– Paithong Intersection on Kalasin -Kamalasai Road in Mueang Kalasin District. Data and information on all risk spots were collected from October 2015 to May 2016, and the same data collection process was repeated again at risk spots that had the highest number of injuries and death both old and new spots with a combination of 10 team members from working group committees from all levels.



On October 8th, 2015 at 08:30AM., a ten-wheel truck rolled over in the middle of the Kalasin – Somdet Road at kilometer no. 541 where 17 people were injured.

On October 29th, 2015 at 20:30PM., a passenger van hit the end of the pick-up truck on Kalasin – Somdet Road where 4 people were injured.

On November 2nd, 2015 at 07:00AM., a school bus rolled over on Huai Phueng– Somdet Road where 17 students were injured.

On November 6th, 2015 at 15:20PM., a pick-up truck hit a motorcycle on Nong Khaen Road in Don Chan District, a young rider and a passenger were killed.

On January 16th, 2016, a motorcycle crashed with a car on Kalasin – Somdet Road at the entrance to Kalasin University (Na Mon Campus) where 3 people were injured.

On March 7th, 2016 at 07:35AM., two pick-up trucks collided on Kalasin – Somdet Road at the entrance to Kalasin University (Na Mon Campus) where 2 people were seriously injured.

On March 14th, 2016, a car crashed with a motorcycle on Kalasin – Somdet Road at the entrance to Kalasin University (Na Mon Campus) where 2 people were injured.

On February 7th, 2016 at 15:20PM., a pick-up truck crashed with a motorcycle on Kalasin – Somdet Road in front of PTT Gas Station where 2 people were seriously injured.

Monthly meetings for the working group committee were conducted from October 2015 to May 2019 whereby the risk spot investigation team attended and shared their information each month. The committee together with the investigation team were analysing the cause and suitable solution before concluding the meeting outcome and passing the information to the relevant agencies to carry out a short term solution. The information was then presented to the Kalasin Provincial Security and Peace Committee for further job responsibility allocation to the relevant agencies.

The working group had notified all relevant agencies of the committee's decision on risk spot treatments for final consideration and implementation both in short and long term. The work was carried out during October 2015 to May 2016 to treat a total of 10 risk spots. Examples are as followed.

Risk spot treatment completion

Tenrisk spots out of 40 risk spots have been treated, which comprised 25% of them as follows.

1. Huai Si Thon Junction on Road Number 227 (Mueang Kalasin District - Sahatsakhan District) where the budget being spent was 200,000 Baht.
2. In front of Tesco Lotus Shopping Mall located on Road Number 12 in Mueang Kalasin Town Municipality where the budget being spent was 300,000 Baht.
3. In front of Big-C Shopping Center located on Road Number 12 in Mueang Kalasin Town Municipality where there had been repeated incidents where vehicles leaving the shopping mall cut in front the oncoming traffic to get to the U-turn lane. Budget being spent was 250,000 Baht.
4. U-turn point at Koksri Market located on Road Number 12 in Koksri Sub-district Municipality (Kopainoi Junction) at kilometer number .622 + 832 where the budget being spent was 300,000 Baht.
5. Hamhae - Pontong Intersection located on Road Number 12 (Mueang Kalasin – Somdet District) where the budget being spent was 300,000 Baht.
6. Nontan Bypass Junction located near the PPT Gas Station on Road Number 12 in Mueang Kalasin District where the budget being spent was 250,000 Baht.
7. Honghee – Huai Mek Intersection located on Road Number 12 in Yang Talat District received the total budget of 2,000,000 Baht to install traffic light signals. After the traffic light signal installation, there has not been additional crashes.
8. In front of Kalasin Polytechnic College to Taohai Intersection where traffic was heavy. At this spot, the island was built with the budget of 9,000,000 Baht.
9. Yodkaeng Junction at the entrance to Kalasin University (Na Mon Campus) where the Kalasin District Highway Office had received the budget of 20,000,000 Baht to widen the road and install the traffic light signal and safety support equipment.
10. E-Hong Motor Intersection located on Road Number 227 where the road leads to another route leading to Thepsuda Bridge, which is a tourist destination. Thus, the traffic is very busy and frequently had crashes. The budget for treating this location was 250,000 Baht.

In order to treat the risk spot at the entrance to Kalasin University (Na Mon Campus), the Kalasin District Highway Office together with partnered agencies had installed the white-red traffic poles, reflective barriers, and warning light signals to reorganise the traffic lane as a short term treatment. After the treatment, there has not been any fatal crash.

Lessons learned: after risk spot treatments have been implemented, it was clearly shown that the reduction in the road crash incidents causing casualties occurred and in some locations there has not been any crash at all. This phenomenon had attracted the media interest that numbers of TV programmes have come to report on the work.

Thus, good lessons are learned showing that even a short term solution can still help reduce or prevent road crashes, so this approach should be expanded into other risk spots that face similar road safety issues and causes.

Evaluation

The below table showed the road crash statistic comparing between pre and post risk spot treatments in 10 locations.

No.	Risk Spots Already Treated	Prior to treatment (August 2014)			After Treatment (31 May 2016)			% of decrease			% of Increase		
		Crash	Death	Injury	Crash	Death	Injury	Crash	Death	Injury	Crash	Death	Injury
1	Huai Si Thon Junction, Mueang Kalasin District				Treatment completion on 30 September 2015								
		5	1	4	0	0	0	100	100	100			
2	In front of Tesco Lotus Shopping Mall, Mueang Kalasin District				Treatment completion on 15 September 2015								
		4	0	5	0	0	0	100	100	100			

No.	Risk Spots Already Treated	Prior to treatment (August 2014)			After Treatment (31 May 2016)			% of decrease			% of Increase		
		Crash	Death	Injury	Crash	Death	Injury	Crash	Death	Injury	Crash	Death	Injury
3	In front of Big-C Shopping Center, Mueang Kalasin District				Treatment completion on 15 October 2015								
		6	0	8	1	0	0	83	0	100			
4	U-turn point at Koksri Market (Kopainoi Junction)				Treatment completion on 10 November 2015								
		5	1	5	0	0	0	100	100	100			
5	Hamhae-Pontong Intersection, Mueang Kalasin District				Treatment completion on 10 November 2015								
		6	3	7	0	0	0	100	100	100			
6	Nontan Bypass Junction, Mueang Kalasin District				Treatment completion on 10 December 2015								
		4	0	4	0	0	0	100	100	100			
7	Honghee- Huai Mek Intersection, Yang Talat District				Treatment completion on 10 April 2016								
		7	2	11	0	0	0	100	100	100			
8	In front of Kalasin Polytechnic College – Taohai Intersection, Mueang Kalasin District				Treatment completion on 11 April 2016								
		6	1	7	0	0	0	75	0	71			
9	Yodkaeng Junction, Yang Talat District				Treatment completion on 15 March 2016								
		22	0	28	0	0	0	100	100	100			
10	E-Hong Motor Intersection, Sahatsakhan District				Treatment completion on 1 June 2016								
		3	0	5	0	0	0	100	100	100			

Conclusion

The important factor that helps achieve successful outcome in road safety work for Kalasin Province is that all relevant agencies have provided full cooperation throughout planning to implementing stages with sacrifices, unification, and continuation. More importantly strong leadership and support from the senior management was apparent. Therefore, this kind of cooperation should be expanded into other organisations such as local administrative organisations, community groups and leaders for sustainable solutions.

Traffic Volunteers Help Prevent Road Crashes in BuengKan Province

Pol.Lt.Col. Suntisook Suttikulsombat
Buengkan Provincial Police

The road crash statistics of all 8 districts of BuengKan Province in 2013 showed that 623 people had been injured while 23 were killed. In 2014, 797had been injured while 49were killed. More than 60% of crashes occurred on secondary roads such as Sub-district Administrative Organisation roads/village roads/community roads (information from Road Accident Victims Protection Company Limited). Most people that were involved in road crashes were teenagers and young adults, the vehicle type that has most crashes is motorcycles, the causes of crashes are reckless driving, unskilled driving, unsafe driving, drink driving, and driving without wearing helmets.

Buengkan Provincial Police has allocated traffic police force into communities to manage local traffic. However, due to inadequate resourcescompared to the number of roads in the local areas, the community road safety issues have increased. To address the problem, a network of traffic volunteers from civil sector was formed to take part in road crash prevention and reduction on secondary roads in rural areas. Their roles are range from traffic management on community roads, enforcing integrated rules, promoting knowledge on traffic law and safe driving skills in order to help reduce casualties among villagers. This type of network also included students in schools to assist in traffic directing services in school and in front of school to promote safety for other students.

Objectives

1. To get all relevant parties from every level in BuengKan Province to participate in solving road safety issues in community areas.
2. To further develop traffic volunteer networks to assist traffic police in traffic management in accordance with local people's ways of lives through local participation.
3. To have traffic volunteers assisting in road safety promotion activities within community/village/school for safe road user behaviours and driving responsibly.
4. To reduce injuries and casualties caused by road crashes on local roads through traffic volunteer networksas a pilot project to be developed and supported by local administrative organisations in establishing the traffic volunteer network of their own.

Traffic Volunteers' Capacity Building

Traffic Volunteers are selected from the Civil Defence Volunteers from 10 local administrative organisations and general public who are interested in becoming a traffic volunteer.

1. The work started by conducting a meeting where information, problem issues, and integrated work processes were shared among police, 10 pilot local administrative organisations, and a working group.
2. Traffic Volunteer training curriculum is governed by the Royal Thai Police regulation on traffic volunteers' roles, uniform, and symbol B.E. 2555 (2012). In addition, the training approach to promote the road safety volunteer model was also employed. Traffic volunteers' work was to assist in traffic management and road users in front of a school, market, community check-point, and mobile patrol unit (operated during Songkran Holiday)
3. There were a total of 100 traffic volunteers from 10 pilot local administrative organisations attended the training.

Monitoring and Evaluation

A provincial information sharing session was conducted to have all 10 pilot local administrative organisations present their work to other local administrative organisations from all areas in the province for exchanging knowledge and experiences.

Outcome

Road crash statistics in pilot local administrative organisations showed that the overall number has decreased where the highest reduction seen was by 53.57%.

Table 1: Pilot Local Administrative Organisation's Road Crash Statistic in 2015 - 2016

Pilot Local Administrative Organisations	Number of Crash in 2015	Number of Crash in 2016	Percentage of Reduction (%)
1.Pak Khat Sub-district Municipality	44	36	18.18
2. Ho Kham Sub-district Municipality	52	45	13.46
3.Phon Charoen Sub-district Municipality	93	58	37.63
4. Tha Sa-at Sub-district Municipality	84	45	53.57
5. Dong BangSub-district Administrative Organisation (SAO)	63	57	9.52
6. Na SabaengSub-district Administrative Organisation (SAO)	31	26	16.13
7.Nong Phan ThaSub-district Administrative Organisation (SAO)	10	3	30
8. Nong Hua ChangSub-district Administrative Organisation (SAO)	11	9	18.18
9. Khok KwangSub-district Administrative Organisation (SAO)	27	22	18.52
10. ChaiyaphonSub-district Administrative Organisation (SAO)	16	8	50

Note: Data was from Narenthorn Emergency Center - 1669, Buengkan Hospital, Buengkan Provincial Police, Road Accident Victims Protection Co., Ltd. (RVP) Buengkan Branch

Road casualties occurred during New Year and Songkran Holidays that are due to drink driving was reduced by 100%compare between pre and post project implementation. The traffic volunteer joined the police force in making arrests fordrink driving. Arrests made during New Year Holiday increased from 83 offenders in 2015 to 118 offenders in 2016. There were 6 casualties, but due to other causes rather than drink driving.

Figure 1: Illustrated number of arrest made on drink driving offence during public holidays, which can stop casualties by 100%

Table 2: Road Crash Statistics during Long Public Holidays after Project Implementation

Road Crash Statistics during Long Public Holidays after Project Implementation					
New Year Holiday in 2016			Songkran Holiday in 2016		
Crash/times	Death	Injury	Crash/times	Death	Injury
26	6	21	4	1	3
Crash number has decreased by 84.61%/Death has decreased by 83.33%/ Injury has decreased by 85.72%					
Remarks: Casualty during both holidays was due to other causes rather than drink driving					

Table 3: Crash Statistics during Songkran Holiday in 2015 and 2016 Comparing between Pre and Post Project Implementation

Crash Statistics during Songkran Comparing between Pre and Post Project Implementation					
Pre Project Implementation			Post Project Implementation		
Crash/times	Death	Injury	Crash/times	Death	Injury
9	2	7	4	1	3
Crash number has decreased by 44.44%/Death has decreased by 50%/ Injury has decreased by 42.86%					
Remarks: 1.Casualty occurred in 2015 was due to drink driving. 2. Casualty occurred in 2016 was due to the victim wandering on the road in the middle of the night before being hit by a truck, wherein was later found that the victim was mentally ill.					

Note: Data presented by Buengkan Provincial Disaster Prevention and Mitigation Office

Helmet wearing statistic

The police had conducted a random survey on helmet wearing in the area of pilot local administrative organisations both pre and post project implementation (the survey was conducted at 07:30 – 09:30AM.). The survey outcome was as followed.

1. Pak Khat Sub-district Municipality, Pak Khat District, increased by 60%.
2. ChaiyaphonSub-district Municipality, Mueang Buengkan District, increased by 50%
3. Ho Kham Sub-district Municipality, Mueang Buengkan District, increased by 45%.
4. Phon Charoen Sub-district Municipality, Phon Charoen District, increased by 60%
5. Tha Sa-at Sub-district Municipality, Seka District, increased by 45%
6. Dong BangSAO, BuengKhong Long District, increased by 46%
7. Na SabaengSAO, Si Wilai District, increased by 50%
8. Nong Phan ThaSAO, So Phisai District, increased by 60%
9. Nong Hua ChangSAO, Phon Charoen District, increased by 40%
10. Khok Kwang SAO, Bung Khla District, increased by 60%

Table 4: Helmet wearing rate on riders and passengers in pilot local administrative organisations comparing between pre and post project implementation

Location	Pre - Project Implementation				Post - Project Implementation				Helmet Wearing Rate (%)	
	Rider		Passenger		Rider		Passenger			
	Wear	No wearing	Wear	No wearing	Wear	No wearing	Wear	No wearing	Pre	Post
1. Pak Khat Sub-district Municipality	25	70	4	40	60	17	27	40	24.16	60.41
2. ChaiyaphonSub-district Municipality	9	27	-	18	20	10	8	18	16.67	50
3. Ho Kham Sub-district Municipality	12	30	2	17	20	9	7	24	27.45	45
4. Phon Charoen Sub-district Municipality	24	44	6	32	46	19	10	17	28.30	60.87
5. Tha Sa-at Sub-district Municipality	10	18	1	12	11	6	8	17	26.83	45.24
6. Dong BangSAO	9	20	1	14	15	8	7	17	22.73	46.81
7. Na SabaengSAO	6	11	-	12	10	7	4	7	20.69	50
8. Nong Phan ThaSAO	14	25	2	12	18	12	12	8	30.19	60
9. Nong Hua ChangSAO	6	12	-	10	14	10	4	2	21.43	60
10. Khok KwangSAO	5	11	1	7	12	6	6	6	25	60

Key to success

1. Having 100 more traffic volunteers to assist in police's traffic management and services, which help promote and increase road safety and security for the general public.

2. Providing opportunities for civil sector to participate in problem solving that have a direct impact on their lives that are suitable to local context to promote sustainability.
3. Establish pilot villages that have traffic volunteers to assist in community traffic management and security work.
4. Utilise an opportunity for knowledge and information sharing on project work, whereby processes can be adapted by other areas.
5. Road safety network is expanded to other communities.
6. Reducing road crash injuries and casualties in communities.
7. Reducing conflict between people and officers to a certain level.
8. As informed by the traffic volunteers that criminal and drug problem in communities had also decreased.

Project expansion

To obtain budget from Provincial Administrative Organisation to expand the project work into all villages. Additional budget support from the province would also be used to conduct a project on female traffic volunteer network establishment.

Conquer "100-Death Curve" through the Power of Network Partnership in Nakhon Phanom Province

Mr.Wattakan Lapsarn
Nakhon Phanom Provincial Disaster Prevention and Mitigation Office
Acting Sub Lt. Yordphet Kumsangdee
Nakhon Phanom Highway District

For Nakhon Phanom Province, road crash statistics in 2012 showed that there were 528 crashes with 551 injured and 123 fatalities. In 2013, there were 486crashes with 525 injured and 128 killed. In 2014, there were 531 crashes with 585 injured and 76 killed. Some of the survivors have become disabled, which leaves a burden on families and society.

Ban Kluai Curve is a risk spot located on the National Highway Number 212, Nakhonphanom - That PhanomSection, at Kilometer Number .330+054 – Kilometer Number .330+354, Kham Thao Sub-district, Mueang Nakhon Phanom District. The curve has a horizontal curve design with narrow radius and limited speed of 60km/hr. Originally it was a 2-lane road with frequent fatal crashes, which the local people named "100-death curve" since it is well known to people in Nakhon Phanom Province. In 2004, the road expanded into a 4-lane road, but more fatal crashes resulted in the loss of lives and injuries.

The database from 2007 – 2015 showed that there were 8 crashes resulting in 25 injured persons, and 2 deaths. This location has made headlines on national news when a pick-up truck crossed the traffic lane and crashed into the SUV when a foreigner was killed and others were injured. The incident took place on July 17, 2015 at 15:30PM which has motivated relevant agencies to try to reduce crashes. A multi-disciplinary road crash investigation team was established consisting of the following agencies;

1) Nakhonphanom Highway District
2) Nakhonphanom Rural Highway District
3) Nakhonphanom Provincial Health Office
4) NakhonphanomProvincial Land Transport Office
5) Nakhonphanom Provincial Disaster Prevention and Mitigation Office

6) Road Accident Victims Protection Co.,Ltd (Nakhonphanom Branch)
7) Nakhonphanom Provincial Police
8) Sub-district Administrative Organisations/community leaders
9) Rescue volunteers
10) Nakhonphanom Provincial Public Relations Office/Radio Thailand/news media

The team's working mandate is to look at the cause of crashes before looking for ways to prevent crashes or reducing damage caused by the crash. The team conducted a road crash investigation on Ban Kluai Curve where the Kham ThaoSub-district Administrative Organisation and the community leaders were invited to the meeting to reflect on the problem and issues as well as share their view on solutions for safer community. The team then visited the site and analysed the information on crash patterns, and causes. At this spot, the leading cause was speeding beyond the limit that the curve was designed to accommodate. Thus, the crash pattern involved both overshooting the curve or crossing over and collided with the oncoming vehicle from the opposite lane. A community hearing was held for public consultation on the local needs before presenting all information to the Provincial Road Safety Directing Center where the risk spot treatment work was allocated to relevant agencies. For example, the Nakhonphanom Highway District was responsible for road engineering improvement for the curve to be able to accommodate higher travelling speed. A barrier was installed on the median to reduce severity of the crash. A large warning sign for drivers to reduce speed at danger curve and clearing the area to improve visibility, and strictly enforcing speed law was planned. The team has adopted the five community road safety principles and five working strategiesfor implementing work as follows.

Five Community Road Safety Principles

1) Information analysis for problem solving
2) Risk spot prioritization for highest risk spot treatment
3) Multidisciplinary teamwork
4) Most cost effective measures
5) Community participation for road safety solutions

Five working strategies

1) Relevant road safety network establishment
2) Road crash data collection and analysis
3) Presenting information to responsible agencies
4) Leadership and working support
5) Evaluation and assessment

Thailand Road Safety Network's working principle is to link all relevant road safety agencies together and allow them to take responsibility in road crash prevention and mitigation for Nakhonphanom Province. This is well reflected in the work carried out by Nakhonphanom Highway District who is responsible for the road of concern. A follow up evaluation and road crash data at the risk spot's post treatment found that there was no crash since December 2016 up until present. The long term road engineering treatment is now planned to ensure that the curve is safe, but another more important aspect is to improve road users' behaviours, which contributed more to road crashes, so road engineering improvement alone cannot sustain safety.

Cooperation for Successful Organisational Road Safety Measures in Sakon Nakhon Province

Mrs.Sasinun Akkaranonchaiyakit
Road Accident Victims Protection Co., Ltd. - Sakon Nakhon Branch

After a multi-disciplinary team was established, the road safety work moved into data analysis of the road crash data, which was drawn from three databases police, public health, and Road Accident Victims Protection Co., Ltd. (RVP). The analysis outcome was later presented to the community showing that the highest casualty age group has moved from teenagers to young adults. There were a number of factors contributing to more road crash incidents among these young income earners particularly their drinking after work, which often resulted in them being involved in road crashes. This information along with the consequences was later presented to the senior management of the organisation by showing actual examples of a real employee who was involved in a road crash and the impact on both the family and the organisation. The reaction of the management is how to help employees travel to and from home safely.

After the organisation had agreed to participate in the project, a working team was formed to take charge of drafting and setting up the road safety measures that were agreed by all employees of the organisation. Following the implementation, a monitoring and evaluation process was then carried out. The outcome was based on pre and post data collection in order to be able to identify the difference between before and after the project implementation. The organisation's road safety measures were targeting 100% helmet wearing. Nine organisations had seen the reduction on road crash incidents among their employees.

Keys to success

1. Having a road safety network team and evaluation team being appointed by the Governor whose members are dedicated and place public interest ahead of self-interest and work towards a common goal.
2. Setting up selection criteria that targets the right piloting organisation based on a lessons learned from past experience (basing the criteria on the failure where a mass group of 250 organisations from across the province had signed up for the project, but failed).

3. Set up plan to meet with the head or the management of the organisation for better understanding and seeking support prior to project implementation.
4. Maximizing the existing data from three sources, whereby data analysis was done both quantitatively and qualitatively.
5. Allowing organisational involvement in project planning to ensure continuity and sustainability. Undertake team support with coaching, and varying the working method but retaining the same shared objective.
6. Allowing the organisation to run the project themselves, so they would have a chance to learn how the project is planned and implemented using their own budget. This involves information survey, data collection, road crash data collection and analysis for pre and post project implementation. However, they were advised and guided by the multi-disciplinary team who has established a group chat via Line Application for better communication.
7. Open floor to the organisation to present their project outcome at the Provincial Road Safety Directing Center for knowledge sharing and experience learned.
8. Involving the local media to attend the experience sharing session to project public information to a wider audience.
9. Setting up a plan for monitoring and evaluation by a separate monitoring and evaluation team twice a year.
10. Encouraging more road safety work in an organisation by presenting the award to the one that passes the evaluation in provincial and national level.

Youth Traffic Volunteers from Nonsa-at Pittayasan School Non Sa-at District, UdonThani Province

Pol.Lt.Col. Amnat Tanomsab
Nonsa-at District Police Station,UdonThani Province

It is believed that youngsters are the country's future, and if they are exposed to good deeds at a young age, they would grow up to become good citizen for the society. Moreover, the young are easily susceptible to new learning, so road safety conscience would be well absorbed and practiced and they will become responsible road users as they grow up.

Thus, Nonsa-at District Police Station has taken part in the "youth traffic volunteer" project by working together with Nonsa-at Pittayasan School and road safety network partners consisting ofUdonThani Provincial Land Transport Office, UdonThani Provincial Highway District 1,Road Accident Victims Protection Company Limited – UdonThani Branch, Nonsa-at Hospital, Nonsa-at Sub-district Municipality, rescue volunteer unit, Highway Police at Nonsa-at Service Station.Nonsa-at Pittayasan School was selected based on its success in 100% helmet wearing promotion project, so they are familiar with road safety working processes. A road safety learning center operated by Nonsa-at District Police Station was set up as a sub-station in school. The center provided knowledge on key road safety principles, traffic law, emergency contact, emergency assistance, healing process, all which has helped students see the whole picture of road traffic system. Other related activities were road marking and traffic sign installation in school, which was used as an off-road practice track for students to learn how to drive correctly and safely. The effect of this would have evaporated if there was no one to continue with the work once the police work is completed, so a group of traffic volunteers were trained to maintain road safety activities in school. Their roles were to assist the traffic police in traffic management and services as well as leading road safety activities such as being a road safety key speaker at the center to spread road safety messages to other students. They were also acting as a coach to students from other schools that came to visit their school for road safety activities. The center was also used as a learning center for the community, whereby electronic learning materials were compiled and used for knowledge transfer by the youth traffic volunteers. If the center passed the evaluation by the Provincial Land Transport Office, the center could be used as part of a licensing training programme required for a driver licensing test in the future.

The police learning center has proven to be useful in disseminating road safety knowledge and traffic rules where it is potentially becoming a learning center for the district.

The key to success was due to cooperation among the road safety network of multi-disciplinary team members who have filled the knowledge gap as each of them had brought onboard different area of expertise and put it all together into this learning center.

Community Check-point for Community Road Safety in Nong Bua Lamphu Province

Mr.Tongpan Yodkeeree
Nong Bua Lam Phu Provincial Disaster Prevention and Mitigation Office

"Community Check-point"

Work has been integrated between police, local community, traffic volunteers, and other local relevant agencies to conduct a community check-point to prevent road crashes. The traffic volunteers were given additional training to assist traffic police and become the main task force for conducting the community check-point under the operation concept of "people center". The National Police Act B.E. 2547 (2004) Section 7 allowing the Royal Thai Police to promote local community participation in police activities for crime suppression, peace, and security of the people as appropriate to the local needs (community rules establishment). The community participation criteria and process is governed by the regulation of theNational Police Policy Board. The community-checkpoint operation was supported by the Thai Health Promotion Foundation, and has adopted a similar working process of the Royal Traffic Police Development Project where a small force is used for larger scale work. The community check-point was the outcome of the integrated work of community stop-point and police check-point where its operation is supervised by the Commissioned Duty Police Officer,traffic volunteers assist police work in community, village, and sub-district level. This type of check-point is exercising the measures that were agreed by the local people and police, which helped reduce conflict between the two sides caused by previous unsolicited police check-point activities. Therefore, the community check-point have represented true police law enforcement for the sake of public interest without accusation and defaming.

Working outcome

The traffic volunteer helps interceptnot only on traffic offence, but also on other criminal and drug suppression activities. After the check-point was implemented, each of the district police stations has seen the reduction on road crash incidents.

Road Crash Statistics of Nong Bua Lam Phu Province

Community Check-point	Road Crash Incident		Minor Injury		Casualty	
	Dec. 2014 - Apr. 2015	Dec. 2015 -Apr. 2016	Dec. 2014 -Apr. 2015	Dec. 2015 -Apr. 2016	Dec. 2014 -Apr. 2015	Dec. 2015 -Apr. 2016
Nong Bua Lam Phu District Police Station	13	13	1	1	14	14
Non Sang District Police Station	39	21	42	19	2	2
Na Klang District Police Station	41	35	36	36	7	7
Si Bun Rueang District Police Station	10	6	1	0	7	6
Suwannakhuha District Police Station	16	17	11	9	6	5
Na Wang District Police Station	32	32	33	33	4	2

Non Mueang Sub-district Police Station	6	6	8	8	0	0
Total	**157**	**130**	**132**	**106**	**40**	**36**

Project Highlights

1. The community agreement has been formed where law is enforced appropriately and adjusted according to actual setting for good traffic management.
2. There is a balance between law enforcement and community safety without any mistrusts or defame.

How to turn 100-death Curve into 0-death Curve ?

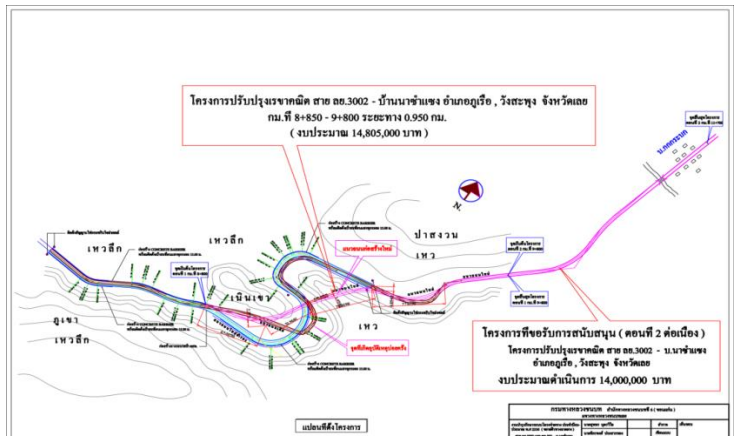
Mr.Kittidaj Srisuwan
Loei Provincial Public Health Office

At the Provincial Road Safety Directing Center meeting, the information on risk spots, road crash statistics, number of injuries and casualties were presented by Mr.Kittidaj Srisuwan from Loei Provincial Public Health Office (team member of Thailand Road Safety Network).

On Road Number 3002 (where 100-death curve is located), which is a shortcut betweenPhuRuea District and Wang Saphung District. This route helps shorten the distance by 30 kilometers, but it is full of dangerous curves, and steep areas, which contribute to frequent road crashes resulting in great loss of lives and property. Thus, the Road Crash Investigation Working Group of Loei Province was formed, which consists of heads of Provincial Disaster Prevention and Mitigation Office, Provincial Highway District 1 and 2, Provincial Public Relations Office, Rural Highway District, Provincial Land Transport Office, Provincial Police, Provincial Public Health Office, Road Accident Victims Protection Co.,Ltd.– Loei Branch, and Rescue Teams in Loei Province. The team conducted a site investigation, gathered data, and presented the outcome analysis at the Provincial Road Safety Directing Center meeting. At this meeting, all team members discussedand agreed on possible solutions and road engineering work for risk spot treatment. In the end, Mr.Kasem Satjarak from Rural Highway District submitted a budget request for 18 million Baht to the Department of Rural Road, which was used for redesigning the road to make it safer. After the treatment was completed, there have been no crashes at that spot. The team has set up a mobile phone chat group via Line Application called “365 days for safer Loei” to coordinate on road safety issues in emergency cases since 2013.

Prior Risk Spot Treatment

After Risk Spot Treatment



Ban Kho Community's Participation in Road Crash Reduction in Mueang Khon Kaen District

Mrs.Nittayaporn Srihabua
Khon Kaen Hospital

Ban Kho Community Village Number 3 has 223 households with a total population of 1,076 (543 male and 533 female). There is one Opportunity Expansion School, one private kindergarten school, one temple and one municipality. The village is located about 10 kilometers from Meang Khon Kaen District with a rural highway passing through the village. The majority of the population is farmers who use motorcycles as their main transport. The school is located on the road side and the village is located on the opposite side of the school, so students have to cross the road on a daily basis. This is highly risky and there has been one fatality and 10 being injured in the previous year.

Working approach

Road safety issues cannot be resolved by one individual organisation, it has to be done through multi-disciplinary teams from all sectors and in all levels to concretely drive the countermeasures for road crash prevention and reduction. The working strategies involved the following;

1. Searching for team members from relevant agencies who share the same working objective.
2. Establish a good working relationship and share the same believe that by helping others is a good way of making merit.
3. Motivating network partnership's participation in every working process.
4. Giving birth to a leader of Change agency, which is often the head of local agencies.
5. Planning, monitoring, evaluating and assessing the work of the responsible agencies and management body through a monthly meeting, which has facilitated the work according to the plan. In doing so, this has helped the working team members to be able to resolve any obstacles.
6. Promote public communication to the general public through five tactics using various means;1) presenting road crash data, cause of crashes, and consequences, 2) linking all relevant road safety agencies together,3) adopting good road safety working model that is suitable to local contexts, 4) checking and assessing work to

resolve any obstacles, 5) giving mental support and complimenting the working team for doing good work. Moreover, the working process is adopted from the World Health Organisation (WHO)'s community road safety for sustainability, which is consists of five methods; 1) local information development and analysis, 2) prioritizing risk spots based on data analysis, 3) multi-disciplinary teamwork, 4) selecting the most cost effective measures for problem solving, and 5) generating community participation in every step of the project working process.

Working methods

1. Community preparation is comprised of;
    1) Recruiting working team members, this consists of hospital staff/ sub-district government officers/ municipality staff, to attend the road safety knowledge and road crash prevention training.
    2) Meeting with the local leaders (Mayor of Ban Kho Sub-district Municipality/Director of Sub-district Health Promoting Hospital) to explain about the project objective and its significance. This is followed by having community leaders being selected by Sub-district Health Promoting Hospital staff. The community leaders comprises of Village Headman, Assistant Village Headman, Public Health Volunteers, teachers, youth leaders, and other relevant groups to attend the road safety knowledge training for road crash prevention.
2. Set up a community hearing session asking the local people to share their dream on their future community road safety, and what road safety issues they are currently facing.
3. Identify community road safety issues that urgently needs to be tackled by having local people to vote on the issues obtained from the community hearing session. Further information related to the selected road safety issue is collected and analysed before presenting the results to the community.
4. The community leaders composed the community road safety project implementation plan, and presented it for public hearing for community approval of the plan.
5. Community work is carried out.
6. A lesson learned session is conducted to have all information, problems, and successful story shared and reflected back to the community for future work planning as part of post project implementation outcome and assessment. In

addition, risk behaviours of local road users and road crash data both pre and post project implementation was surveyed and collected. Community road safety data is continually collected as part of safety monitoring while lesson learned data was collected through in-depth interview of local people and relevant agencies.

Project outputs

1. Summary of community road safety in local people's dreams
    1) Community that is free from road crashes.
    2) Having community road safety rules that everyone follows.
    3) Becoming a community road safety model for others both domestically and internationally.
    4) Renovating the community hall to become a road safety information center.
    5) Continue having officers as advisors to provide support in any aspects.
2. Summary of community's view on road safety issues
    1) Those involved in road crashes both the injured and the deceased did have impact on the community.
    2) There are a number of risk spots particularly at intersections and junctions that are prone to road crashes.
    3) There is not enough street lighting, which is risky for road users when travelling at night.
    4) Road users' risk behaviours such as speeding, modifying the vehicles, non-helmet wearing, unfasten seatbelts.
    5) Students crossing road to and from school is risky and some students had already been injured.
3. Provided technical training to the main road safety target group of community leaders, youth leaders, parents, kindergarten and primary school students, and villagers who did not have a driver license. Promote cooperative work between student leaders and Civil Defence Volunteers as well as providing road safety equipment such as traffic warning light signals, reflective jackets, helmet storage, community and school risk spot treatments, and village road safety rule establishment.

Pre	Post
- 36% helmet wearing rate	- 90.1% helmet wearing rate
- 59% seatbelt fasten	- 90.5% seatbelt fasten
- 51% of villagers did not have a rider license, while 41.5% of villagers did not have a driver license	- 100% rider license being obtained - 100% driver license being obtained
- 57.69% of motorcycles did not have Compulsory Coverage	- 100% motorcycles have insured for the Compulsory Coverage
- There were 15 risk spots, 10 people had been injured and one dead	

Project outcomes

- Having cooperation among officers from Khon Kaen Hospital, Ban Kho Sub-district Municipality, Nongpor Health Promoting Hospital, and Sumjan Health Promoting Hospital to become road safety mentors to support local road safety work.
- Having strong community road safety leaders (Village Headman, teachers, Public Health Volunteers, youth group) who are the key mechanism in mobilizing and assisting in risk spot investigation and mapping as well as risk spot treatments.
- The school director has treated risk spot in school and nearby school area since it is located on the rural highway road. The treatment involved warning sign installation, traffic warning light signal, issuance of school road safety rules, setting up youth traffic volunteer to work with Civil Defence Volunteer on student road crossing supervision before and after school hours. A road safety training session with students and parents was also conducted to share the information on road crash impacts and helmet wearing benefits as well as providing free helmets, all of which has contributed to better road use behaviours.
- Conducted community road safety training for youth and labour groups targeting disciplined driving, helmet wearing, and fasten seatbelts. They were also taken to Khon Kaen Hospital to visit the emergency ward. The Provincial Land Transport Office has also assisted in driver license training and issuance of compulsory coverage.
- All risk spots in the community were treated, for example, a warning sign was installed at the intersection, the installation of the traffic mirror and speed bump.

The community leaders have shown interest in road crash prevention work to protect their community, and now know how to work as a team. They have linkages with other agencies from outside the community, which they are now capable of presenting an implementation plan to requesting for municipality budget support. They have also learned the planning process with full and complete participation from community members. This has helped the community team identify the risk behaviours, risky environment, and related equipment that is relevant to risk spot treatment planning, problem issue prioritization, treatment implementation, and assessment. They also have road safety knowledge and conscience to maintain their community road safety as well as other related skills such as emergency rescue and assistance.

Lessons learned

1. Found that the community itself has the potential to develop their own community participation process and are capable of carrying out the process on their own.
2. The team support is needed for facilitating coordination.
3. Having experience in community participation work is critical.
4. When working with the community, the community needs to be viewed as the centerpiece (not ourselves as a center), so their working hours are not the same as government official hours.

In summary, community participation process development for community road safety has to be carried out by involving community in every step of the work while the relevant agencies provide knowledge and coordinating support. This has promoted the community ownership to tackle road safety issues, which have resulted in reductions of road crash incidents and related damages. Thus, this type of project should be expanded into other nearby sub-districts and to continue the work.

The outcome work at Ban Kho community has become a good model for the sub-district that others both domestically and internationally have visited to look at their work. The community has also won the first price for sub-district health promotion work that expanded to cover all 20 villages. The award was presented by theChief Executive of the Provincial Administrative Organization. In 2016, Ban Kho community has also received the award for outstanding road safety local wisdom from the Asian Transportation Research Society (ATRANS). The next step is to prepare for the upcoming evaluation from the World Health Organisation (WHO) to certify for a safe community next year.

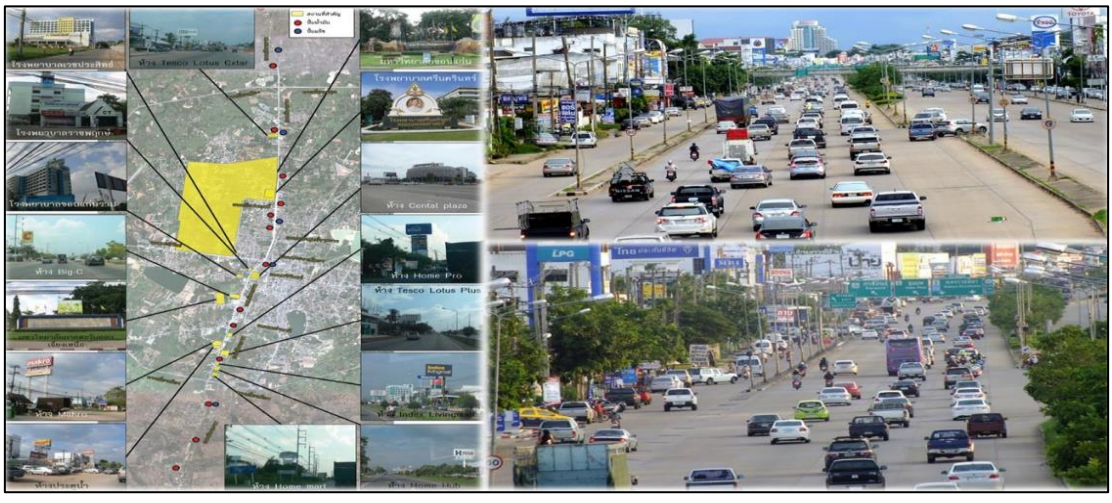
Speed Control by Automatic Speed Cameras on Mittraphap Road At Khon Kaen City Section

Asst.Prof. Dr. Thaned Satiennam

Khon Kaen University

Background

Khon Kaen Province has been experiencing road crashes caused by over speeding particularly on Mittraphap Road, which stretches through Khon Kaen City area for 14 kilometers. Road crash statistics in 2012 – 2013 showed an average of 500-600 road crash incidents per year, and 1-2 people being injured daily with 1–2 casualties per month on average. The road is a 12-lane road with multiple U-turns, both sides of the road are filled with university, shopping malls and hospitals, which result in high traffic density with an average of 100,000 vehicles per day. Thus, there is a mix between vehicles of different sizes and speeds sharing the same road, which are often involved in severe crashes.



As road crashes tend to increase, the relevant agencies together with other road safety partners have started working on speed control measures on the road sections of concern. This is divided into four periods as follows.

First period in October 2012: The Khon Kaen Road Crash Prevention and Reduction Committee and other road safety network partners had cooperated with relevant government agencies to set a speed limit for city area of 60km/hr (however, this had no legal effect), the speed limit signs were installed along the whole section together with public announcement through local media and strict enforcement by the police mobile speed cameras. However,

there was little success since police does not have legal authority to arrest the offender, and people were not complying with the speed limit sign, and there were a limited number of speed cameras and task forces needed for enforcement.

Second period in 2013: The committee had received an offer made by a foreign company to install automatic speed cameras in which the company would pay for the installation cost, and they would be paid through the agreed percentage of fines that were collected. However, this offer was turned down due to legal complications.

Third period in 2013 – 2014: A study to assess the speed control measures and attitudes towards such measures were conducted. The outcome study had given more information on the speeding situation at the target section of the road, road crash situation, people and relevant officers' attitudes towards speed limit measures used. The recommendation that came out of this study was to increase police law enforcement efficacy by using the automatic speed camera, which could be supported through the budget by the local municipalities. However, the recommendation was not able to turn into practice.

Fourth period in 2015: Khon Kaen Province had submitted a project proposal on 24-hour automatic speed cameras to Mr. Michael Woodford, CEO of Safer Roads Foundation for budget support, which resulted in the province receiving a total of 17.3million THB (phase 1).

14-kilometer Safe Driving Project Working Process

The project objective was to reduce road crashes on Mittraphap Road at Khon Kaen City Municipality constituency. The speed limit was set at 80km/hr in accord with Land Traffic Act, and road users were encouraged to use the bypass road, which has a speed limit of 90km/hr. The project was commenced on 1 November 2015 where speed cameras were installed at a location before reaching the risk spot and before reaching the city. At phase 1, four cameras were placed in Sila Sub-district Municipality, two in Mueang Kao Sub-district Municipality.

The control room was set up at Khon Kaen Highway Police Station, which was used for issuing fine orders and payment. It was also used as a learning center for other organisations to visit and learn about its operation. All information recorded by the camera was sent to the command system, and information reported to the control room for data analysis on vehicle

speed in real time. The vehicle type was divided into three main categories of 4-wheel (car/pick-up truck/van), motorcycles, and large vehicles (buses/truck/trailers).

The project information was publically announced through public media, social media, and public signs, which were placed on the overpass and roadsides prior to project commencement as well as poster and pamphlets distribution to those who were being fined. This pamphlet contained information on road crashes related to speeding.

An MOU was also signed by all organisations that participated in the project to ensure project sustainability. These organisations consisted of Safer Roads Foundation, Highway Police Division, Khon Kaen University, Sila Sub-district Municipality, Mueang Kao Sub-district Municipality. The municipalities were responsible for road maintenance work and related budgets for maintenance of equipment, while the highway police used them to enforce the law. Moreover, the university was responsible for conducting a project assessment study where the Road Safety Group of Thailand had provided budget.

Enforcement outcome

Under the automatic speed camera system, the fine order was issued by a computer, referred to as the e-ticket, which has enabled police to issue the ticket 7 times more compared to pre project implementation period. In the past, police issued the ticket 60-80 tickets per day, but after the new system was in used, the ticket was issued around 400-600 tickets per day.At the beginning of the project there was a surge of speeders, but as the time goes by the number has dropped. The conclusion that the project is successful in reducing people travelling at high speed on the road section of concern was made.

Road crash statistics

Road crash data was gathered from four hospitals; Khon Kaen Hospital, Srinagarind Hospital, Khonkaenram Hospital, and Ratchaphruek Hospital where information pre and post project implementation for the period of 12 months was collected and shown on table 1 – 3. The result showed that the number of crashes has decreased by 9.35%(from 278 times down to 252times), number of injured decreased by 7.56%(down from 357to 330), however, the number of fatalities increased by 2 during New Year Holidays in December and January as indicated in

Table 3. Apart from that public holiday period, number of incidents, injured, and fatalities decreased across the board. When looking deeper into data, what found is that most fatal crashes take place during 00:00-04:00 hours, and many cases involved motorcycle crashing into the back of the trailer. In some cases, the trailer driver was doing illegal parking and motorcycle rider was drunk. Thus, there is the need for additional preventive measures to help resolve road safety issues effectively. However, there should be given more time span for 1-3 years for project assessment in order to see the real trend more clearly.

Table 1:Number of road crash incident in project area before and after project implementation

	Period of Time (2015 – 2016)												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Set	Total
Pre	15	22	28	18	16	28	27	20	28	36	35	20	278
Post	18	18	38	36	16	27	26	17	24	20	19	11	252
Different	+3	-4	+10	+18	0	-1	-1	-3	-4	-16	-16	-9	-26

Table 2: Number of Injurers (person) in project area before and after project implementation

	Period of Time (2015 – 2016)												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Pre	22	26	26	21	20	34	33	26	31	46	40	26	351
Post	21	20	48	40	15	30	28	20	25	35	21	27	330
Different	-1	-6	+22	+19	-5	-4	-5	-6	-6	-11	-19	+1	-21

Table 3: Number of casualty (person)in project area before and after project implementation

	Period of Time (2015 – 2016)												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Pre	0	2	1	1	1	2	1	2	1	2	1	0	14
Post	0	0	4	7	1	0	0	0	1	2	1	0	16
Different	0	-2	+3	+6	0	-2	-1	-2	0	0	0	0	+2

Keys to Success

The road safety network working group has carried out a regular monthly meeting to constantly monitor work progress. The group comprised of Highway Police, Provincial Police, local municipality, hospitals, Highway District, university, private sector, and media. Each organisation's representative has brought with them different area of expertise and related networks. They are dedicated and work for the sake of public interest.

In the case of municipal leaders, they have to have a vision to promote local people's safety when using roads. These leaders are responsible for presenting and defending the project to the municipal council to gain budget support in order to be able to maintain equipment for project operations by the police.

For the law enforcement body, which formed a significant part of the project, the police officer has to have positive attitude towards the project and be serious about enforcing the safety laws. The enforcement team has to be supported by other network partners both in terms of information and mediation by answering questions concerning the project work to public to ease tension between the two parties.

Budget support comes from local organisations such as local administrative organisations, provincial governing agencies, private sector, or foreign foundation. Thus, when looking at the amount of investment that was put into road crash prevention and reduction, the cost is well spent, and it has become a project model for sustainable road safety solution.

Obstacles

Pre – Project implementation

1. There was a great concern over the budget in the long term, which was very high in maintenance cost. This involved the team member having to defend project's budget to the municipal council for budget approval.
2. The long approval period by relevant agencies for permission to install the equipment due to concern over the equipment standards and safety. Process to test the equipment was used.
3. The ideal location for installing the camera stands was mostly on private individual land, so it was difficult to find a suitable location to install the cameras before reaching the risk spot, which could have impacted the speed control before reaching the dangerous spot.
4. The lack of knowledge and understanding for the need for speed control and appropriate use of speed when driving by the public, which resulted in great pressure on the team at the beginning of the project.

During project implementation

1. There is legal restrictions in setting up the speed limit, which cannot be appropriate to urban areas compared to other countries (in other countries, the speed for urban area is set for 50 or 60 kilometers per hour).
2. There is still a gap on law enforcement where there is no countermeasure for those offenders who refuse to come to pay fine. The existing system cannot effectively deal with the problem despite attempts to get the Provincial Land Transport involved by not allowing the vehicle registration renewal. However, that has not worked due to the lack of linkage on regulations between different organisations (Royal Thai Police and Land Transport Department). Another issue is that the lawsuit statutory period is only one year, and the fine amount is little, so only 20-30% had turned up to pay fine.
3. Both law makers and law enforcement officers have to stay up to date on the current situation and consider ways to handle or punish those offenders who fail to pay fines to uphold justice.

4. There is a limitation on catching the license plate holder as the current camera technology used is unable to detect the motorcycle since the license plate is on the back of the vehicle. Another problem is that it cannot use this method when the license plate is red (temporary license plate used in new vehicle while waiting for the actual registration to take effect), foreign license plate number, and counterfeit license plate. Moreover, the photo that is taken at night is not as clear compared to day time.
5. There is a limitation on the number of officers who can issue the ticket compared to number of offenders.
6. Some crashes occurred by others such as illegal parking on the road side by trailers at night time, which led to number of crashes especially after midnight(from December 2015 to September 2016, there were 4 crashes with 5 casualties within 8 months period).

Future project work

At present, the project is able to reduce road crashes due to over speeding up to a certain level, but there are still other causes contributing to the crashes such as illegal parking of large vehicles, or running the traffic lights. Thus, other relevant agencies have to look at more appropriate measures to help reduce crashes down to zero such as finding areas for trailer parking, conducting drink driving check-point particularly at night time, and searching for better technology to assist in more effective police enforcement.

Lessons Learned from Nam Phong District Road Safety Management in Khon Kaen Province

Mrs.Thitima Seanchot
Nam Phong Hospital

Road safety issues in Thailand have reached a critical stage to the extent that it has been affecting society in the city and rural areas. The amount of damage is constantly rising, which led the country to become the second highest number of road crash casualties in the world. However, road safety measures have been persevered with under the leadership of Dr.Witaya Chadbunchachai and Khon Kaen road crash prevention and reduction team for more than 30 years. Their work is a successful indicator for sub-unit work at provincial level. Examples such as helmet wearing law enforcement promotion, and post road trauma care in Mueang Khon Kaen District in 1987 – 2002. The achievement was recognized by the World Health Organization (WHO) and Japan International Cooperation Agency (JICA)[i]. However, when looking at the national level, road crash reduction is still far from international standard where road casualties are cut by half or 14.15 persons per 100,000population. This is due to a system and components that contribute to road crash injuries and casualties that has become complex just as vehicle technology has advanced while road building has allowed vehicles to travel at even at higher speeds.

The national road safety crisis is a starting point for the establishment of national road crash prevention and reduction network partnership, which is consists of representatives from government, private, civil sectors, and relevant organisations such as: Thai Health Promotion, Thailand Road Safety Network, and Road Safety Group Thailand. They came together to help search for strategies, tactics, and measures that are suitable and applicable to help remove obstacles through small scale work. The target area in reality is at local community level which is located nearest to the problem road safety spots. The work involves community capacity building and participation that helps them mobilise the local wisdom and budgets to solve local road safety issues with some assistance from external agencies as appropriate. This is said to be based on the leverage principle that small object can be used to move much bigger objects. As Archimedes once said "give me a place to stand on, and I will move the Earth" ("Archimedes," n.d., para 7)[ii]. Thus, it would be good learning from Nam Phong District who has attempted to search for tools to make levers to help move their road safety obstacles with the little force at their disposal.

Community road safety crisis in Thai society: the overall situation at Nam Phong District, Khon Kaen Province

Nam Phong District is a large district in Khon Kaen Province. It is consists of 12 sub-districts, 168 villages, and a total population of 114,588(household registration of 2015). There are both national highway (Mittraphap Road) and rural highways passing through the district. In addition, there are number of large industrial factories located in the district such as a power plant, paper production plant, and NGV gas transportation plant and a, sugar mill. There is increasing traffic within the community area, which results in frequent road crash incidents. **97.33% of the crashes happened to the local people on the community roads,** while2.67% involved outsiders including fatalities on theMittraphap Road. Details of injuries and death due to road crashes in Nam Phong District from 2012 – 2014 is shown in Table 1[iii].

Year	Injury	Death
2012	902	26
2013	901	19
2014 (Oct. 2013– Sept. 2014)	1,045	23

Even though the number of injury and death tend to decline in the past 2 – 3 years, the level of severity of injuries has increased particularly in the case of severe head injury becoming the leading cause of death before reaching hospitals. The number is climbing (motorcycle crashes comprised 88.43%of the total crash incidents, and 95% casualties is from motorcycle crashes).

Among the risk behaviour factors leading to the crashes, drink driving is around 29.38%, but the leading factor causing severity of injuries is not wearing helmets, which made up of 57.8%

Creating awareness of the problem … understanding the goals and needs of the community

The severity of injuries as being monitored and tackled by the relevant agencies such as District Public Health Office and hospitalshave begun from…

2003		2011	2013
Emergency Medical System (EMS) gathered and analyzed information on injury, but still lacking an in-depth solution to the problem. It only reflected the information at the government agencies meeting.	Learned about cooperative working approach from Kut Nam SaiSub-district Municipality who combined road safety planning with the EMS work. It has adopted local wisdom to solve road safety issue, which has reduced road crashes in community. Thus, the road crash preventive work has started being integrated into the emergency medical system	Khon Kaen Province had selected pilot districts to participate in TEACH VIP project to become road safety mentors under integrated road safety working approach. This multi-disciplinary team consisted of hospitals, Highway District Office, local administrative organisations, and Deputy District Chief.	Presented the information being collected by Nam Phong Hospital, and conducted an analysis on community road safety situation before projecting the result to the head of local administrative organisations. Pilot communities were then selected to have risk spots treated in Nam Phong Sub-district. First spot was Nam Phong Market Community, and another location was Bannongyalungka Village (the community rule was set to prohibit vehicles from passing the village on Buddhist Lent Day)

The problem and related information was presented to the local people at the community hearing to promote their participation and take ownership in the problem. This activity is aimed at attracting their cooperation and tackles the problem through “Learning by Doing” approach. The target group was divided into two levels with details as follows.

1. Setting up working objectives

The objective is to reduce road crash incidents, number of injuries and death.

1) The overall picture level
   - CUP Nam Phong: KPI in 2016, the road toll is no more than 18 per 100,000population.
2) Specific target level
   - 12 sub-districts have completed risk spot analysis

- First and second highest risk spots of each sub-district are treated through community's road safety measures (agreed rules).

2. Creating participation

1. Creating understanding on severity of the road safety problem in the district by presenting the information to the relevant agencies at the meeting. The information being presented consists of the following;

1) Key information on "walk-in" road crash victims who come to the hospital onto the register
2) Information from theSurveillance and Rapid Response Team (SRRT)
3) Information on local risk spots
4) Information from rescue unit (dispatch information) and photos

2. Creating an information analysis team, this consists of municipality mayor, community leaders, Chief of Provincial Labour and Social Welfare Office, Provincial Industry Office, Provincial Office of Natural Resources and Environment, hospital, representative from private companies such as Sugar Mill, Liquor Factory, and Ammonia Manufacturer. The analysis is completed before presenting the result at District Road Safety Directing Center.

Meeting resolutions

1) The meeting agreed to the selection criteria for risk spot identification in all 12 sub-district areas where crashes frequently occur.

2.1 Risk spot treatment

1) A meeting for district road safety mentors was held to select 6 community leaders in each sub-district. They are Director of Sub-district Health Promoting Hospital, Chief of Subdivision of Disaster Prevention and Mitigation, Sub-district Administrative Organisation officer, Sub-district Headman, Village Headman, Village Committee, and Community Police Volunteers.
2) Risk spot selection process

2.1) Information preparation

2.1.1) Road crash data from each sub-district (basic information from Nam Phong Hospital)

2.1.2) Village map within each sub-district

2.1.3) Road crash information from each sub-district (information from community leaders/ Sub-district Health Promoting Hospital/and Sub-district Administrative Organisation, where they had self-collected data

2.2) Risk spot identification process

2.2.1) Analysis on the overall risk spots (how many in the area)

2.2.2) Categorize level of severity by color coding

- Red means fatal crash for one death and higher
- Yellow means frequent crashes where injuries sustained that required medical treatment in hospital
- Green means frequent crashes with minor or no injury that does not require medical treatment

2.2.3) Prioritizing the significance of each spot before selecting the first and second highest risk spots.

2.3) Collision pattern analysis

A community meeting was held in each sub-district, attending representatives were Director of Sub-district Health Promoting Hospital, Chief of Subdivision of Disaster Prevention and Mitigation, police, Community Police Volunteers, and Sub-district Headman.

- To look at collision patterns and time of crash using the collision diagram + HiyariHatto(trained by Khon Kaen University)
- Discussed and agreed on resolutions to address the problem, and to have information shared with the community including site visits and investigation together with the Chief Executive of Sub-district Administrative Organisation (SAO). This was follow by a community hearing before laying out the plan for risk spot treatment and budget plan within SAO.

Risk spot treatment sample: KSL sugar cane truck parks on the roadside

- From site investigation, it was found that there are problems on the dusty road, drug related problems, and prostitution, which the management of the area aims to solve within 2 years.

- Chief Executive of SAO requested for the information involved in rear-end collision from hospitals and municipality databases before presenting to the District Chief.
- Exercising an authorized shut down for 30 days.
- Problems have been solved due to the change on the senior executive person (former owner's children have taken up position), whereby a meeting between the new executive and municipality was held in which the sugar miller agreed on the following; 1) the sugar miller will buy the drainage area for truck parking 2) set up safety measures for sugarcane farmers to conduct their sugarcane transportation and extraction safely, 3) to shutdown sugarcane extraction during New Year and Songkran Holidays.

The number of crashes and their severity have reduced but there are still few incidents of rear-end collision due to unavoidable causes such as the truck parking on the road side due to mechanical breakdown.

Another safety issue related to sugarcane farming ispre-harvest burning and smoke prevention, which involved; 1) responding to community action,2) raising awareness, 3) solving problem from the cause rather than the outcome 4) Highlight the continuing integration into normal operation rather than by holiday season period only. In addition, it requires a small budget from municipality and focusses on private sector's involvement.

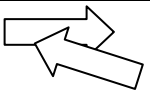
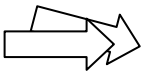
2.2 Engaging in community + networking + resolution agreements or community rules.

Working process is as follows;

1) Called a sub-district meeting to select one village to participate in the community rules project. Project objective, and community road crash situation was also presented at the meeting.
2) Sought road crash data from each village, and analysed the cause by the community leader.

3) The road safety mentor and community leader conducted a community hearing to seek community agreement and approval on the road safety resolutions.
4) Sought a consensus agreement on the use of community rules witnessed by community leaders and community committee.
5) Set up a meeting to present the project work and outcome at the district level, chaired by Nam Phong District Chief.
6) Established village road safety network from 12 sub-districts to mobilise road safety rules and continue working in road safety.

Road safety solution sample: in front of Lotus market, the problem is; 1) "stacked" parkingthat encroaches into the traffic lane, 2) parked vehicles blocking the exitfrom Namphong market, 3) incidence of crashes around 2-3 per monthly on average, but no casualties.

Collision Pattern		Time of Crash	Supportive Information
1. 	Side collision	Morning: 06:00 – 09:00AM. Evening: 15:00 – 18:00PM.	- Driving on wrong lane - Speeding
2. 	Rear-end collision		- Stacked parking obstructing vision - Parking blocking the exit

Solutions: Conducted a community meeting asking for participation in information analysis for road crash cause. It was found that road crashes occurred caused by risk behaviours of drivers from other areas since the municipality has already designated the area to be prohibited for parking. The meeting has agreed to set up a community rule as well as enforcing the law to correct drivers' behaviours. Other measures also being applied, for example, changing the parking into parking allowed on odd or even dates and put marking on the edge of the footpath indicating the length of the road where temporary parking is allowed (white and yellow colour), or no parking (white and red colour). This maintenance work was carried out by the local administrative organisation together with Nam Phong Highway Depot without waiting for annual budget allocation. Post treatment assessment: found that vehicles have taken up 2 lanes for parking, the working team decided to increase safety measures by having police enforce the law during rush hours. However, there is no longer parking blocking the exit.

Strength of community participation: it has fostered various conceptual ideas, detailed thinking processes such as road crash victim's residential location, road crash contributing factors, crash pattern, road conditions, mutual agreement establishment, and community safety rules establishment.

Weakness of community participation: community hearing/meeting has to be conducted after working hours as many of them are farmers and factory employees, which posed difficulties for some senior executives to attend the meeting. Thus, the information has to wait to be presented at the chief executive of local administrative organisation meeting instead.

Follow up and evaluation

What has been found is;

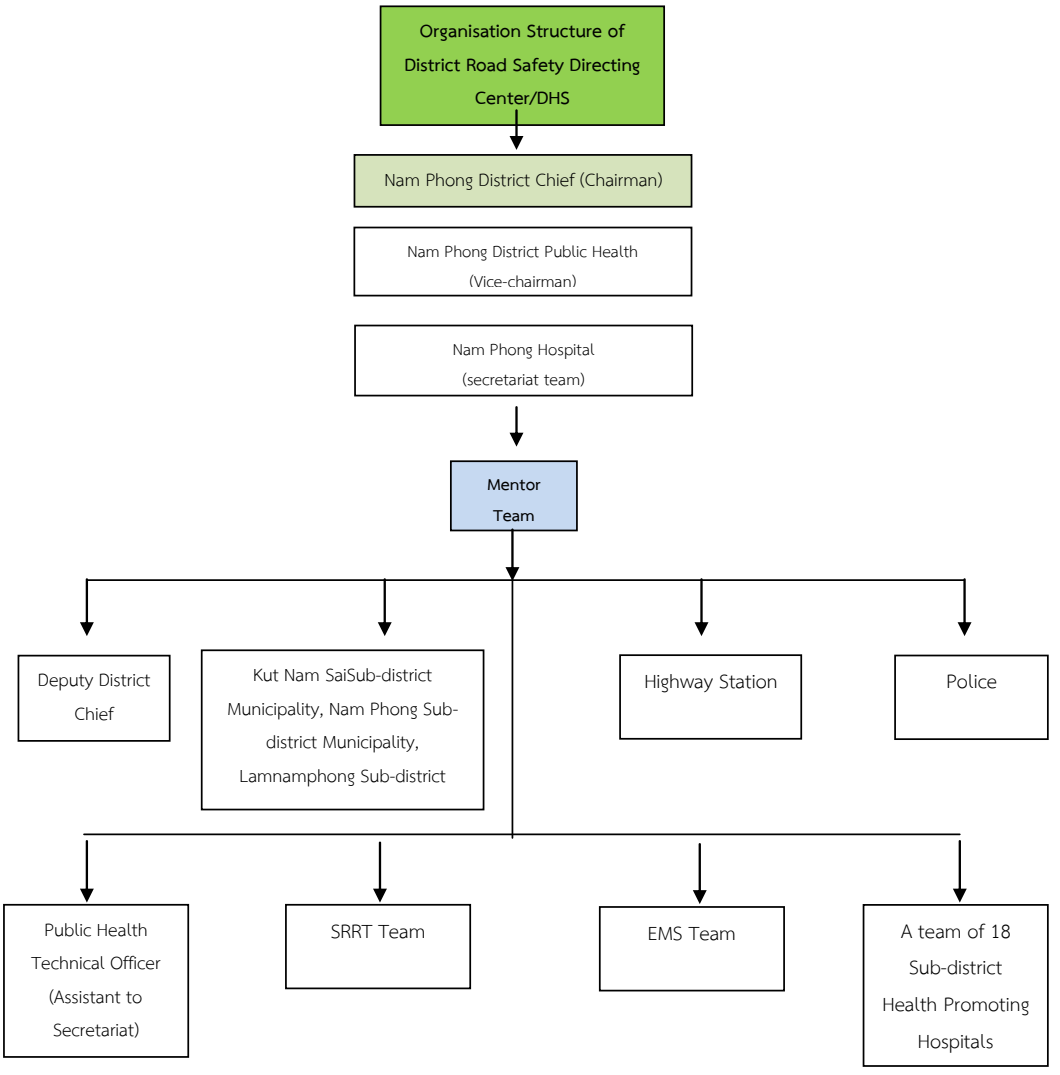
1. The level and severity has been reduced (30% severely injured, average age of 22-35 years old, peak number of crash incidents occurred at 18:00 – 22:00PM., one time higher in male than female, and often takingplace on main road). However, the number of injury and death is unchanged, while drink driving is reduced by 50%, while helmet wearing is at 40%. Regarding speeding suppression work, police lacks speeding detecting equipment. Thus, the mentor from Nam Phong Hospital and the municipality are preparing to present the project outcome and future work plan to the meeting in all levels.
2. To correct road user behaviours through law enforcement and community rules does take time especially in the case of urban communities particularly with teenager and working adult groups.
3. It caused changes in three levels as follows;
   3.1 Community level; the local people has started to realise that road safety issues are everyone's responsibility, many of them started to see that there is still a way to concretely solve road safety problem and issues. However, there is still some resistance from a group of people who believe that they are not benefitting from the work such as shop vendors and local politicians.
   3.2 Working level (Change Agent); Each team member started to talk to each other a lot more, where their resolution relies on factual information and a complete analysis. Moreover, the work has reached out to the community level where their capacities on problem solving skill + cooperation from local leadership + community safety measures, have been witnessed.

3.3 Individual level: it requires more time and constant work in order to change individual risk behaviours.

4. Road Safety budget has been included in the provision of local administrative organisation, universal health coverage plan of 18 Sub-district Health Promoting Hospitals, internal road engineering and maintenance plan of Nam Phong Highway Depot and Khon Kaen Highway District.

Key to success for short term plan

1. "Windows of opportunity"
   - Structure+ KPI + budget
     A quick win policy by the Minister of Public Health who set the KP: road toll in a district not to exceed 18 per 100,000population (2016 fiscal budget year).
   - The establishment of District Road Safety Directing Center has allowed relevant agencies to cooperate on risk spot treatment and set up other road safety measures.



2. Set up a mutual working objectives and planning (MOU) with relevant organisations and agencies focusing on mutual benefits.
3. Five road safety tactics are used
    - Information management, linkage with local administrative organisation, and basing decisions on basic information.
    - Select risk spot for treatment
        - Mapping risk spots using "Hiyari-Hatto" mapping system
        - Using Collision Diagram for crash pattern analysis
        - Using Haddon Matrix to set road safety measures in district level
4. Key person – Mrs.Thitima Seanchot, ER Registered Nurse, Nam Phong Hospital
    - Seeing the opportunity in working on the prevention side
    - Seeing money (Sub-district Health Promoting Hospital's budget + local administrative organisation's budget for disaster prevention)
    - Seeing people (all 12 sub-districts have emergency rescue units)

The turning point is being realised with all factors (work, money, and people) have fallen into place where EMS work can be combined with Prevention (five road safety working processes)

5. There is a monitoring, and evaluation process, which includes on-site assessment and presenting the outcome.
6. The system is supervised and solves problems such as having a rescue team to clear up the road where sugarcane was dropped by a truck.
7. Set up a key road safety leader (district and provincial level) to help set up sub-district road safety network.
8. A leader who has a vision that is up to date and recognises the current trend has been changed (in the past municipality works on the basis of pubic satisfaction, so the objective was to provide "service work", but now, the organisation has to elevate its work onto "a role model for social responsibility").

Recommendation/local observation

1. Should provide training to the district road safety mentors from each sub-district, which consisted of Director of Sub-district Health Promoting Hospital, Chief of Subdivision of Disaster Prevention and Mitigation, Sub-district Administrative Organisation officer, Sub-district Headman, Village Headman, Village Committee, and Community Police Volunteers, so that they can conduct post risk spot treatment assessment on behalf of the provincial road safety mentors.

2. Turning crisis into opportunity where even though road safety work has not been highly successful, it has given an opportunity for people in the community to come to work and get to know each other.
3. **Important condition** is how to make the municipality and local administrative organisations aware of the problem and give importance to the issue**.**
4. The biggest proposition is how to continue work in the district.
5. Local politician must have concern over the work that has potentially created conflict within the area, which could directly affect their votes.

The local capacity building is developed through learning by doing approach, which allows people within the community to participate in the thinking process, questioning, and analysing the problem and issues that the community is facing. They have to start collecting information (qualitatively/quantitatively), conduct trials to establish the answers, and summarise the lessons learned with the help from the mentor who is supervising and monitoring work. The work at Nam Phong District has demonstrated an integration of local wisdom, public health knowledge, and road safety knowledge, and applies that to community road safety work. This helps giving them the strength to push road safety issue, which resulted in reducing risk behaviours and promoting positive behaviours for sustainable road safety that is suitable to the local context and constant changes in the society.

[i] Prof.Paibul Suriyawongpaisal, New Start Up Thailand Road Safety

[ii] https://en.wikipedia.org/wiki/Archimedes

[iii] Nam Phong Hospital Injury Surveillance Report, 2014

The opening ceremony of the risk spot analysis on community roads atWang ChaiSub-district

11 April 2016 at Wang Chai Sub-district Administrative Organisation


Risk Spot 1

Wat Mahachai Junction

(the entrance to Ban Khok Klang Village, Village Number 14, Wang Chai Sub-district)

Risk Spot 2

PTT Gas Service Station.Intersection

Risk Spot 3

The curve in front of Wang Chai Sub-district Administrative Organisation

(Ban Wang Chai Village, Village Number 6, Wang Chai Sub-district)