

SUNDA PANGOLIN PROTECTION AND TRADE-RELATED CRIMES: ASSESSING LOCAL COMMUNITY KNOWLEDGE IN KEDAH, MALAYSIA

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Abstract: Wildlife species endangerment is often attributed to both illegal international trade and weak national law enforcement. Despite efforts to protect pangolins, the species survival is vulnerable to international trade, and, hence, more measures need to be taken in addition to the regulatory system to protect the species. In Malaysia, the national laws use both incentives and disincentives to ensure that people protect wildlife. Besides efficient enforcement, awareness of the legal provisions among the local community is equally important for the laws to be effective. Accordingly, this paper examines the local community's knowledge of the regulatory protection of pangolins in Kedah. It also explores the association between demographic factors and such knowledge. The study found that the local community had average knowledge about the regulatory protection of pangolins but lacked knowledge regarding provisions on protection and rewards for wildlife crime informants. The study found no significant association between gender and knowledge. However, it discovered a significant association, respectively, between knowledge and age and employment. Little is known about local perception concerning the seriousness of wildlife crimes in Malaysia. The survey results showed that the respondents perceived pangolin-related crimes as serious. It also uncovered that gender, age and occupation have a significant effect on local community perception concerning the seriousness of such crimes. This paper concludes by discussing the implications of the findings for efforts to account for the role of knowledge in the effectiveness of wildlife law and for regulatory policy. The results of the study provide essential baseline information, which is important to design better awareness intervention that can minimize the decline of pangolins.

Keywords: Crime, international trade, law, pangolin, wildlife

Introduction

Despite pangolins being so close to extinction, the species is not a well-known mammal in Asia and Africa. There are eight known species of pangolins; namely, the Chinese pangolin, Indian pangolin, Sunda pangolin, Philippine pangolin, Temminck's ground pangolin, white-bellied pangolin, giant ground pangolin, and the black-bellied pangolin (Challender *et al.*, 2014). Apart from its ornamental value, pangolin scales are believed to promote blood circulation and to treat psoriasis, infertility, asthma and even cancer (Duckworth *et al.*, 2008). Many also believe that the pangolin's scales are an aphrodisiac and can accelerate milk secretion, while its meat is served as a delicacy and tonic (Hua *et al.*, 2015). These beliefs have fuelled the high demand for pangolins. The main destinations are China and Vietnam where traditional Chinese medicine is widely practised (Cheng *et al.*, 2017). It has been

estimated that demand in China alone amounts to 200,000 pangolins per annum with the price of pangolin scales having risen over the past five years (Zhang *et al.*, 2015). Ninety per cent of the pangolins seized worldwide were described to be from mainland China, Hong Kong, Thailand, Vietnam, Indonesia, and Malaysia (Brown, 2015). The volume of seizures may have been underestimated as most estimations relied on English language reports only (Nijman, 2015).

Law enforcement agencies have begun to give heightened attention to crimes against wildlife with recognition that they are serious like other crimes, such as drug trafficking (Scanlon, 2013). Wildlife crimes take place at the micro-level like poaching for subsistence; the meso-level, such as unlawful buying and selling of protected species in the local market; and the macro-level, especially the international trade of endangered species (Wellsmith, 2011).

Pangolin-related crimes occur at all of these levels with the main threat to the species being hunting and poaching for illegal international trade (Challender *et al.*, 2014a). Pangolins are exceptionally vulnerable to these threats as they have a slow reproductive rate and are easily hunted (Yang *et al.*, 2007), and efforts to captive-breed the species for conservation have been hampered by difficulties (Hua *et al.*, 2015). This makes the protection of pangolins even more essential for their survival.

The Sunda pangolin, also known as the Malayan pangolin, is the only subspecies found in Malaysia. Between 1977 and 2012, it was estimated that 87% of Asian pangolins traded internationally involved the Sunda pangolin (Challender *et al.*, 2015b). Since the inception of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in 1975, all Asian pangolins were listed in Appendix II. Under CITES, Appendix II species can be traded but subject to close control. However, since 2000, CITES members adopted a decision on zero export quotas for the commercial trade of wild-caught Asian pangolins. Acknowledging the need for better protection of the species, CITES members recently have passed a resolution to include all pangolins in Appendix I, which lists species threatened with extinction (CITES Conference of the Parties, 2016). The commercial trade of CITES Appendix I species is prohibited. Besides that, the International Union for Conservation of Nature and Natural Resources (IUCN) has listed Sunda Pangolins as critically endangered (Challender *et al.*, 2014a). Due to their endangered status, pangolins are protected by national and regional laws in their range states (Vallianos, 2016). However, despite the international and national legal protection, pangolins are still traded illegally in substantial numbers (Challender *et al.*, 2015a). This is particularly worrying for the Sunda pangolin as the depletion of Chinese pangolins has shifted the wild-harvesting demand of the species to the Sunda pangolin, especially from Malaysia and Indonesia (Nash *et al.*, 2016; Challender, 2011).

Pangolins are reported to be hunted either on a regular basis or opportunistically throughout the year in Malaysia (Sing and Pantel, 2009). They are sold to local traders who sell them to dealers in Thailand who will then supply the pangolins to China. In the wake of weak enforcement (Ariffin, 2015), it has also been reported that pangolins from the neighbouring country of Indonesia have been smuggled to the northern states of Peninsular Malaysia, including Kedah, to be transported to Thailand to fulfil the illegal market in China and Vietnam (Md Denin, 2015), as well as to Lao PDR (Gomez *et al.*, 2016).

In Malaysia, all pangolin species are listed as totally protected species under the Wildlife Conservation Act 2010 (Act 716) (“the WCA”). The WCA applies to Peninsular Malaysia and the Federal Territory of Labuan. Under the Act, any activities involving hunting, keeping and the import-export of the species and its parts or derivatives require a special permit. Those who want to carry out research on or use pangolins for their zoos, circuses, and exhibitions or to operate commercial captive breeding of the species also require a special permit. Failure to obtain a special permit for any of the activities is a criminal offence. Those found guilty of illegal hunting of pangolins or keeping pangolins, including keeping any parts or derivatives, face a fine not exceeding MYR100,000 or imprisonment for a term not exceeding three years or both. The maximum fine is double if the offence involves immature pangolins and triple for female pangolins. The maximum imprisonment is also increased to 10 years for illegal hunting or keeping of immature or female pangolins. In addition, if the crime involves more than twenty heads of pangolins, the WCA stipulates a minimum fine of not less than MYR50,000. The sale of anything that contains or is claimed to contain any derivative of pangolins is also an offence under the WCA.

Apart from the WCA, as a member of CITES, the Malaysian Parliament passed the International Trade in Endangered Species 2008 (Act 686) (“INTESA”), a national legislation

that applies to the whole of Malaysia making it obligatory to implement the Convention. All pangolin species are listed in the third schedule of INTESA. Any person who imports or exports any scheduled species like pangolins without a permit or re-exports pangolins without a certificate commits an offence. A convicted individual faces a fine not exceeding RM100,000 for each pangolin or readily recognizable part or derivative of the animal; however, the total fine must not exceed one million ringgit. The convicted individual can also be penalized with imprisonment for a term not exceeding seven years or to both a fine and imprisonment. Where the offender is a corporate body, the fine provided by INTESA is doubled. Having in possession, selling, offering or advertising for sale and display to the public any pangolin that has been imported illegally is also an offence under INTESA and is punishable by the same aforementioned penalties.

Fines under INTESA are more severe than the WCA as they are imposed on each individual animal or its parts and derivatives (Ariffin and Mustafa, 2013). In terms of imprisonment, the Malaysian courts have imposed imprisonment sentences for wildlife smuggling offenders under the WCA and INTESA in several recent cases in accordance with the aims of the statutes and public interest. Apart from penalties, both the WCA and INTESA provide for the protection of the identity of informers who give information about wildlife-related offences and potential rewards for them. Local communities can become informants that provide valuable information for intelligence gathering (Lotter and Clark, 2014). Therefore, the identity of the informant should never be compromised to foster confidence among the locals to come forward with crucial information. Rewards, if given to informants who provide true information, can further encourage local informants.

Law enforcement is usually fraught with ineffectiveness due to the lack of resources and technical difficulties (Rowcliffe *et al.*, 2004). Therefore, ensuring the effective regulation of pangolin trade should include measures at the

local community level (Cooney *et al.* 2017). This includes increasing their knowledge or awareness about the law because ignorance of the conservation status of the species and also laws governing their use have exacerbated the exploitation of pangolins (Soewu and Sodeinde, 2015). In the wake of this concern, recently, all member states to CITES are required to undertake capacity-building activities including to promote the understanding of legal provisions concerning trade in, and the use of pangolins as well as to raise awareness, *inter alia*, among the local communities about the conservation status of pangolins and the threats posed to their survival by illegal trade (CITES Conference of the Parties, 2016).

Education and awareness programmes are a two-pronged measure that can be used both to control wildlife trade supply and demand. However, to devise an effective educational intervention programme requires information about the existing knowledge of the public as well as their perception of the issue of concern. Unlike former studies that mostly only looked at the local ecological knowledge about pangolins (Nash *et al.* 2016; Newton *et al.* 2008; Challender, 2008), the current study aims to investigate the level of knowledge of the local community about the regulatory protection of Sunda pangolins and their perception on the seriousness of pangolin-trade related crimes. Wildlife crimes involving species like pangolin are not localized issues in that the causes, or at least their impacts, tend to be geographically dispersed or of international concern. This study also expands the existing literature on the biodiversity conservation laws to the Malaysian context, which is as useful to foreign tourists and researchers as to the local communities.

Methodology

The study was conducted in Peninsular Malaysia in light of reports that pangolins in this region have declined since commercial trade escalated in the 1990s (Challender *et al.*, 2014a). Kedah, which is located in the north-

west of Peninsular Malaysia, and borders Thailand to the north, was chosen as a study area due to its proximity to the pangolin consumer markets in Vietnam and China. Between 2011 and 2013, Kedah recorded the highest prosecution of wildlife offences, second only to Kuala Lumpur (Department of Wildlife and National Parks (DWNP), 2011; DWNP, 2012; DWNP, 2013). In recent years, Kedah has also been implicated in some of the largest pangolin seizures (Oh, 2015). Specifically, the study was conducted in three villages, namely, Kampung Pinang, Kampung Luar, and Kampung Kuala Tekai. This study used a questionnaire survey to collect primary data. A pilot study was conducted with 30 respondents chosen from the study areas to detect problems with the questionnaire design and survey administration. The final survey consisted of three sections. The first section gathered the demographic information of the respondents including their gender, age, employment, and education. The second section was designed to determine the respondents' knowledge about the regulatory protection of pangolins. This part comprised 14 items covering the protection status, import-export, possession, taking, and domestic trade of the species. This section also incorporated a few items to gather general knowledge about the status of pangolins and how the respondents had acquired such knowledge. This section was developed based on the relevant provisions that protect Sunda pangolins under the WCA and INTESA. The third section focused on the respondents' perception concerning the seriousness of pangolin-related wildlife crimes.

The total population of the three villages was 574 people. Based on Krejcie and Morgan (1970), the required sample size for this population was 230 people. A total of 300 questionnaires were distributed among the local communities in Kedah. The response rate was about 85%. From the 256 questionnaires returned, 31 were found to be incomplete. As a result, only 225 questionnaires were usable for the study. Consequently, the sample for the study only achieved 97.8% of the required

Krejcie and Morgan (1970) sample, which may affect the confidence to infer the results to the entire population of the three villages. The survey was conducted from January to March 2015. The respondents were selected based on convenience sampling at public places including markets and food courts or stalls. The selective and convenience sampling of respondents means that although the results are not generalizable to all local communities in Kedah, they do provide important insights. In addition, as this study explored the legal knowledge with a Kedahan sample, the results of the study might be different for studies conducted in different states.

Results and Discussion

About 66% of the respondents were male, and the rest were female. As for age distribution among the respondents, 34% were aged between 18 and 40 years old, and 66% were 41 years old and above. With regard to education, 72% had completed the Malaysian Education Certificate, a national examination taken by form five students in Malaysia, and 11% had the Malaysian Higher Education Certificate, taken by sixth-year secondary school students. Only 6% had a bachelor degree, and 7% had a diploma or other credential, while 4% completed their education until form 3 or below. The study found that most of the respondents (43%) worked as farmers, 17% were civil servants while only 8% were employed in the private sector. As for other respondents (32%), they were self-employed or involved in other vocations, such as retailers, fishmongers, and hawkers. Most respondents (89%) had lived in the area for over 5 years, while a few (5.3%) had lived there between 4 and 5 years and the rest (5.8%) had stayed in the area for 3 years and less.

Knowledge on regulatory protection of Sunda pangolins

All the respondents answered that they knew what a Sunda pangolin is, and most of the respondents (89%) knew that the species is endangered. The majority (78%) conceded that they knew about

this from television, 14% learned about it from the radio and 4% from friends; the rest (4%) from other sources including online-sources from the Internet. This result shows a positive development in light of the many countries that are concerned about the lack of awareness of the protection status of pangolins and their present risk of extinction (Vallianos, 2016).

Slightly more than half of the respondents knew that a permit is required to import pangolins into Malaysia (58.2%), and just under half of the respondents knew that such a permit is also needed to take wild pangolins from their natural habitat (47.6%). About 44% were aware that a person must obtain a permit to export pangolins from Malaysia and approximately 43.6% of the respondents knew that buying or selling a pangolin at a market is an offence. The past several years have seen wildlife crime become of increasing concern to international leaders (UNEP, 2014). Countries with low penalties for such crimes have also revised their national laws (WWF, 2013). Malaysia did the same by adopting the WCA and INTESA. However, the study found that only a low percentage of respondents were aware of the penalties with less than half of the respondents (40%) being aware that a person convicted of a wildlife crime can be penalized with imprisonment.

Most of the respondents (82.2%) were not aware that someone who helps the authorities in detecting a wildlife crime might be rewarded. The majority (76.9%) were also unaware that a permit was required to re-export a pangolin. With Malaysia being labelled as a transit country in international wildlife trade, knowledge concerning re-export requirement is pertinent to the public. This study also found that the bulk of the respondents (73.7%) were not informed about the legal provisions that protect the identity of wildlife crime informants. Besides that, many of the respondents (69.3%) did not realize that possessing an immature pangolin is an offence and that keeping the scales of a pangolin without a permit is also an offence (68.4%).

The items on knowledge can be categorized further into provisions related to international trade; taking and possession; protection status; and informant-related provision. The higher the average mean of the category, the higher the respondents' knowledge of the provision. As shown in Table 1, the respondents had moderate knowledge concerning the protection status of pangolins.

Table 1: Local community's average mean knowledge by category

By group	Average mean*	Standard deviation
Taking and possession	2.11	0.755
International Trade Controls	2.18	0.733
Protection Status of Pangolin	2.27	0.673
Informant related provisions	1.94	0.677

* 3: High, 2: Medium 1: Low

They also had lower medium knowledge concerning the international trade controls and about pangolin taking and possession requirements. Their knowledge about the rewards and protection for informants was the lowest. In the wake of limited law enforcement due to the lack of resources and practical

challenges in Malaysia (Ariffin & Mustafa, 2013; Ariffin, 2015), the role of informants is essential to help with the intelligence gathering of the enforcement authorities. The results indicate that greater exposure to the provisions should be given to the local people.

Association of Sociodemographic Factors with Knowledge

An independent-samples t-test was undertaken to compare the knowledge level of the male and female respondents. There was no insignificant difference in the scores for the male ($M=25.9$, $SD= 4.03$) and female ($M= 30$, $SD= 4.134$) respondents; $t(223) = .282$, $p= .878$. These results suggest that gender does not have an effect on the level of knowledge concerning pangolin protection. A one-way between subjects ANOVA was run to differentiate the effect of age on the level of knowledge on regulatory protection. For this purpose, the respondents were grouped into four categories according to their age (Category 1: 18 to 30 years; Category 2: 31 to 40 years; Category 3: 41 to 50 years; and Category 4: 50 years and above). There was a statistically significant effect of age on the level of knowledge at the $p<.05$ level for the four age categories [$F(3, 221) = 3.82$, $p = .011$]. Notwithstanding the statistical significance, the real difference in mean scores between the categories was almost negligible. Post hoc comparisons using the Tukey HSD test indicated that only Category 2 ($M = 24.5$, $SD = 3.77$) and Category 3 ($M = 26.6$, $SD = 3.8$) were significantly different from one another ($p=.01$). Category 1 ($M = 25.1$, $SD = 4.71$), and Category 4 ($M = 26.4$, $SD = 4.35$) did not differ significantly from the other groups. These demographic-based findings were slightly different from Keane *et al.* (2010) who found a positive improvement in the knowledge of protected species with age and observed better knowledge among male respondents.

A one-way ANOVA was also conducted to compare the effect of occupation on the knowledge of pangolin protection. The respondents' occupations were assigned to five categories (Category 1: civil servants; Category 2: private sector workers; Category 3: farmers; Category 4: self-employed; and Category 5: others). There was a statistically significant effect of occupation on the level of knowledge for the five occupation groups [$F(4, 220) = 4.76$, $p = .001$]. Using the Tukey HSD test, post hoc

comparisons showed that the mean score for civil servants ($M = 24.0$, $SD = 3.21$) was significantly different from farmers ($M = 26.5$, $SD = 4.12$) and those in the 'others' category ($M = 27.5$, $SD = 4.29$) at $p <.05$ level. The study revealed that farmers and other self-employed respondents have statistically significantly higher knowledge compared to civil servants. In contrast, a study on the knowledge of wildlife laws in Madagascar found that farmers had lower knowledge than those in other occupations (Keane *et al.*, 2010).

The success of species conservation goes beyond the accumulation of ecological data because public compliance with protection programmes is equally important. The current study revealed that the respondents had above average knowledge concerning the provisions related to identity protection and rewards for informants, and had better knowledge about other regulatory provisions. With regard to the association between gender and knowledge about the regulatory protection of pangolins, the current study found no significant difference between the female and male respondents. In contrast, past studies found that gender influences the attitude towards wildlife conservation issues albeit with mixed results. Czech *et al.* (2001) found that women show higher concern for conservation and stronger support for the law. However, males were found to be more environmentally concerned in general (Abdul-Wahab and Abdo, 2010). In assessing the awareness about the conservation of green turtles in Terengganu, Malaysia, Abd Mutalib *et al.* (2013) found that male respondents showed a significantly greater awareness level in comparison to female respondents.

Past studies found a positive association between age and environmental attitude whereby older individuals were seen to have more concern for the environment than the young people (Shen and Saijo, 2008). Likewise, the current study also found that age has a significant association with the level of knowledge but that the older group scored a higher mean compared to younger respondents. The current study also established that occupation has a significant association

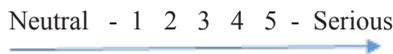
with the level of knowledge concerning the regulatory protection of pangolins.

Perception on Crimes Involving Pangolins

The seriousness of a crime is closely associated with its harm. For law enforcement agencies, environmental harm is basically about the violation of the national and international laws put in place to protect the environment (White, 2010). However, the seriousness of a crime involving wildlife is not straightforward as, most often, the crime cannot be assessed in purely economic terms. Therefore, assessing the seriousness of the crime involves a measure

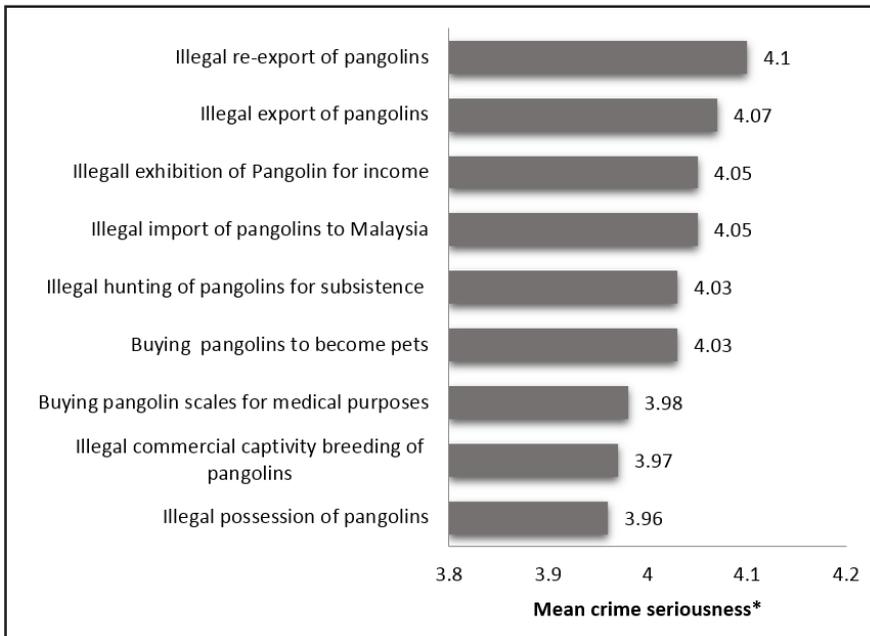
of culpability and harm both of which can be subjective (Raine and Dunstan, 2009). People’s perception of the seriousness of wildlife offences may be influenced by the species and factors like the maturity or quantity of individuals or specimens being involved and whether the culprit is an individual or a corporation. Although perceived seriousness is not the same as the actual seriousness, it is instructive.

In the current study, the respondents were also asked about the seriousness of the various offences involving pangolin. The respondents were invited to rate various pangolin-related crimes on a scale by ticking a number:



Where one is the most neutral and five is the most serious. Therefore, the higher the mean “score”, the higher the perception of the seriousness of the crime. As shown in Figure 1, the survey

results indicate that the respondents perceived pangolin-related crimes as serious with all items achieving a mean crime seriousness of 3 or higher on a 1- to 5-point scale.



* 5: Extremely serious, 4: Very serious, 3: Moderately serious, 2: Slightly serious, 1: Not at all serious

Figure 1: Perception of the Seriousness of Pangolin-related Crimes

More specifically, the study found that the respondents regarded unlawfully buying pangolin scales for medical purposes; illegally captive-bred pangolins for commercial purposes without a permit; and illegally possessing pangolins as moderately serious. The respondents deemed the illegal import of pangolins; unlawful exhibit of pangolins to generate income; illegal buying of pangolins as pets; and illegal hunting of pangolins even to fend for oneself as very serious. However, compared to these aforementioned offences, the respondents saw the illegal export to be a worse crime committed against pangolins. Above all, the illegal re-export of pangolins was perceived as being the worst crime against pangolins by all the respondents.

Sociodemographic Factors

An independent-samples t-test was conducted to compare the perception of the seriousness of pangolin-related crimes between female and male respondents. There was a significant difference in the scores for male ($M=49.9$, $SD=9.75$) and female ($M=53.2$, $SD=7$) respondents; $t(223)=-2.6$, $p=.005$. These results suggest that gender does have an effect on the perception of the seriousness of pangolin-related crimes. A one-way ANOVA was also conducted to compare the effect of age on such perception. Based on the same four age groups used earlier for knowledge, the study found a significant difference among the mean scores [$F(3, 221) = 5.17$, $p = 0.002$]. Post hoc comparisons using the Tukey HSD were conducted to compare between and within the groups. The test indicated that the age group 18 to 30 years old ($M=41.8$, $SD=11.4$) is statistically significantly different at the $p<.05$ level from age groups 31-40 years old ($M=51.3$, $SD=10.6$); 41-50 years old ($M=51.6$, $SD=7.5$); and >50 years old ($M=51.9$, $SD=7.8$).

A one-way ANOVA was also conducted to compare the effect of occupation on the respondents' perceptions of pangolin-related crimes. The test showed there is a significant difference at the $p<.05$ level somewhere among

the mean scores of the five occupation groups [$F(4, 220) = 9.974$, $p = .000$]. Post hoc comparisons using the Tukey HSD test reflected that the mean score for civil servants ($M = 57.7$, $SD = 8.92$) was significantly different from private sector workers ($M = 46.2$, $SD = 9.10$); farmers ($M = 50.5$, $SD = 8.01$) and self-employed ($M = 46.2$, $SD = 10.3$) groups at $p < .05$ level.

In general, the current study found that the respondents perceived most pangolin-related crimes as being very serious. It also uncovered that gender, age, and occupation have a significant effect on the local community perception of the seriousness of pangolin-related crimes. The results show that female and older respondents regarded trade crimes against pangolins as being more serious compared to males and the younger generation, respectively. Similarly, Shelley *et al.* (2011) also found that gender and age had an impact on the perceived seriousness of environmental crimes with women assigning higher seriousness scores than men, and older respondents assessing such crimes as being more serious than their younger counterparts.

Malaysia has promulgated national laws, which, based on their inclusive listing of all pangolin species and stringent penalties, seem to be sufficient to protect pangolins on paper. While the relevant regulatory agencies have conducted enforcement measures that have led to various seizures so far, crimes against pangolins also need to be addressed at the grassroots level by raising the locals' knowledge not only in terms of the ecological aspects, but also the regulatory requirements concerning pangolin protection.

Conclusion

Legislation plays a significant role in protecting pangolins and other wildlife species in Malaysia. The WCA and INTESA protect Sunda pangolins and other non-native pangolin species as well as provide stringent penalties for wildlife offenders. While enforcement and compliance are crucial, the effectiveness of the rules in protecting pangolin is also affected by whether the people

whose behaviour they want to regulate know and understand them. Therefore, local awareness of the laws is the first step towards achieving compliance and a necessary condition for their success (Keane *et al.*, 2010).

The results of the study provide a significant input to the government and regulators in developing an intervention programme to protect pangolins, specifically, and wildlife, in general. The results suggest that the overall level of knowledge regarding the regulatory protection of pangolins among the participating local community was medium. Therefore, more needs to be done to increase the level of knowledge of the people, especially among the younger adult generation. More exposure to pangolin protection laws should also be given to white-collar workers as the results indicate they had a lower mean knowledge about the regulations compared to farmers and self-employed respondents. In addition, the study also found that the participating local community perceived trade-related crimes against pangolins as serious. On the one hand, this gives a promising sign to the government that the people see the importance of protecting the species against such crimes. On the other hand, finding pangolin-related crimes as 'serious' requires sensitivity to the public perception of the enforcement actions being taken by the regulator and sanctions being meted out by the courts against such crimes.

The results of the study provide empirical knowledge and useful insights to policymakers and researchers for developing informed and optimal intervention programmes to induce support for pangolin conservation among local communities. In devising environmental education or awareness programmes, most often, the focus is on highlighting the value of nature or the wildlife that we want to protect. While this may be appealing to some, others may simply not be able to change their attitude or behaviour unless they know there are stringent penalties provided by laws for wildlife-related criminals. Therefore, enlightening the local community about the legal requirements will ensure that a mixture of a reward and punishment approach is employed to raise high awareness and induce

compliance with the laws. Other than that, it is hoped that better knowledge about the legal protection of pangolins can encourage more tip-offs from the public as they become more aware of the activities that are illegal under the law.

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