



## **Effects of Go-Green Campaigns on Changing Attitude Towards Green Behaviour**

**Golnaz Rezai\*, Masoumeh Hosseinpour, Mad Nasir Shamsudin, Ismail AbdLatif and Juwaidah Sharifuddin**

*Department of Agribusiness and Information Systems, Faculty of Agriculture, Universiti Putra Malaysia, 43400 UPM Serdang, Malaysia*

### **ABSTRACT**

A lot of effort has been made by the Malaysian government via go-green campaigns to relay the importance of green behaviour to society. Go-green campaigns have been in force over the last three decades but the effectiveness of such campaigns is yet to be determined. This study seeks to uncover the association between the socio-demographic characteristics and the respondents' attitude towards green behaviour based on the information they received through the go-green campaigns. A structured questionnaire was designed as the instrument to gather data for this study. A conceptual model was developed to identify the variables that were likely to affect the respondents' attitude and decisions on adopting green behaviour. One thousand two hundred and six (1,206) respondents were administered randomly to discover their intention of performing green behaviour following the go-green campaigns. Chi-square and the binary logistic regression model were applied to answer the study objectives. The results show that selected socio-demographic profiles such as age and marital status significantly affect the respondents' intention towards performing green behaviour.

*Keywords:* Attitude, green behaviour, go-green campaign, logit regression, socio-demographic

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*E-mail addresses:*

rgolnaz@gmail.com (Golnaz Rezai)

sanamhosseinpour@yahoo.com (Masoumeh Hosseinpour)

mns@upm.edu.my (Mad Nasir Shamsudin)

ial@upm.edu.my (Ismail AbdLatif)

juwaidah@upm.edu.my (Juwaidah Sharifuddin)

\* Corresponding author

### **INTRODUCTION**

Concern for protection of the environment began at the end of the 1960s in the United States of America and the European Union (Gmert & Juhl, 1995). In recent years, great attention has been given to environmental degradation and conservation and these issues are now part of the global agenda.

Among the environmental problems, climate change has become a core issue. It has a negative impact on the earth and includes issues such as the increase of global mean temperatures, rising sea levels and imbalanced global temperature distribution in tropical and polar areas (IPCC, 1990). There have been a number of international agreements to protect the environment such as the Kyoto Protocol, which was drafted by the United Nations Framework Convention on Climate Change (UNFCCC) in 1997. The convention aims to protect the environment and was enforced in 2005. This international agreement contains 26 articles and carries the signatures of 166 countries that have committed to apply the articles to reduce the production of greenhouse gases (UNFCCC, 2012).

Today, consumers have become more concerned about the direct effect of environmental problems on their daily life (European Commission, 2008). Moreover, the Global Environment Outlook (GEO/4) believes in integrating the protection of the environment into a mind-set and to encourage greater public participation in environmental programmes (Hounsham, 2006). To achieve this, educational programmes and promotional campaigns such as go-green campaigns are being employed.

The seriousness of environmental problems and protection in Malaysia can be traced back to 1974 when the Environment Quality Act was introduced (Initial National Communiation, 2000). However, the country is still facing some environmental

problems such as water and air pollution (DOE, 2010). The sources of water pollution in Malaysia come from sewage treatment plants, manufacturing, agro-based industrial and animal farming as well as agricultural activities and surplus plane (DOE, 2010). Similarly, the sources of air pollution are related to industrial and vehicular emissions (DOE, 2010). Air pollution can also be linked to forest fires in Sumatra and deforestation in Malaysia and Indonesia (Ramachandran, 2012). Thus the Malaysian government has made a strong effort and commitment to protect the environment. For instance, in 2005, the National Strategy Plan for Solid Waste Management was introduced. Along with this plan, the go-green campaign of 3R (i.e. Reduce, Reuse, Recycle) was launched (Chua *et al.*, 2005). In 2009, the government introduced a new ministry known as Ministry of Energy, Green Technology and Water. Together with Non-Governmental Organisations, the ministry organises campaigns on awareness of the importance of environmental conservation and ways to protect it. Thus, the ministry promotes and encourages the public to use green technology as well as eco-friendly products (KeTHA, 2009). The go-green campaign of 'No Plastic Bag Day' every Saturday was launched in 2010; customers are charged 20 sen per plastic bag on Saturdays as a measure to encourage them to bring their own shopping bags (MDTCC, 2012). Moreover, Malaysia has launched a nationwide campaign to plant 26 million trees by 2014; this figure represents Malaysia's population

of 26 million (The Star Online, 2010). Furthermore, Malaysia cooperated with the United Nations' Environmental Programme in its 'The Billion Tree Campaign' in 2007, with around 10,000 Malaysian schools taking part by planting trees around the country (Amar, 2008). In 2013, Malaysia joined the 'Earth Hour Campaign' against climate change for the third time through its representative; the World Wildlife Foundation for Nature Malaysia (WWF-Malaysia) (The Star Online, 2013).

## A REVIEW OF THE LITERATURE

Green consumers are those who are increasingly aware and concerned about environmental issues (Soonthonsmai, 2007) and aim to perform green behaviour (Akehurst *et al.*, 2012). Green behaviour is generally judged in the context of consideration by society as a protective way to conserve the environment or as a tribute to healthy environment (Krajhanzl, 2010). Social psychology literature on environmentally-friendly behaviour argues that attitude is an important factor for performing this behaviour (Donaton & Fitzgerald, 1992). In another study on Dutch households by Arkesteijn and Oerlemans (2005), it was found that the attitudinal factors towards the environmental responsibility are significantly influential in the adoption of green behaviour. Other studies also suggest that there are several influential factors such as effectiveness and beliefs that influence the intention to perform green behaviour (Barnes & Parks, 2012). Furthermore, Padel and Foster (2005)

also found that environmental concerns could be effective in performing green behaviour. Motivation (Steg, 2008) could be another influential factor that is related to green behaviour. In addition, the findings of the study by De Pelsmacker and Janssens (2007) show the importance of the role that society plays on an individual when making decisions to perform green behaviour.

Similarly, demographic characteristics (Squires *et al.*, 2001) such as marital status, age, gender and educational level can affect the performance of behaviour related to the environment (Squires *et al.*, 2001; Mostafa, 2007; Mills & Schleich, 2012; Nguyen *et al.*, 2010; Egea & Garc, 2013). Han *et al.* (2009) indicate that women are strongly different in terms of possessing environmentally-friendly behaviour than men. Moreover, Rezai *et al.* (2013) have shown that the socio-demographic factors of educational level affect the intention to go green. Beside, Nasir and Karakaya (2013) assert that age of the respondents positively affects the intention of performing green behaviour, and younger respondents (Royne *et al.*, 2011) are more willing to behave in an environmentally-friendly way.

A campaign is an educational tool for changing a behaviour (Coffman, 2002), and its impact is not the same for a target with different social demographic characteristics (Curtis & Headicar, 1997). Farrelly *et al.* (2002) state that campaigns can be influential on attitude and belief as well as intention. However, Reubsat *et al.* (2009) believe that campaigns in some ways can increase knowledge and shape the attitude

of a target group with no footprints on attitude. Go-green campaigns are those campaigns which make respondents become aware of environmental degradation and try to teach people to adopt green behaviour in order to save the environment and subsequently the earth (Islam *et al.*, 2010). In Malaysia the concept of go green is new (Phuah *et al.*, 2012) and people are still not quite familiar with or aware of go-green campaigns (Rahim *et al.*, 2012 & Phuah *et al.*, 2012,). For example, the go-green campaign, 'No Plastic Bag Day' was not very popular at the beginning (Azman *et al.*, 2012); however, after a lapse of time the public showed a positive attitude towards it (Zen *et al.*, 2013). In contrast, Omran *et al.* (2009) concluded that some other go-green campaigns such as the one on waste disposal in Malaysia failed because respondents did not have a positive attitude towards it.

In spite of all the effort put into protecting the environment, the concept of green behaviour is still new in Malaysia. Therefore, this study aimed to measure the respondents' attitude towards go-green campaigns. It is important to measure which socio-demographic variables will influence the respondents' attitude towards participating in go-green campaigns that reflect their concern for the environment. The study also aimed to predict the extent to which socio-demographic variables would affect the respondents' intention to perform green behaviour as a result of go-green campaigns.

## MATERIALS AND METHODS

The sampling method of the present study was simple random sampling. One thousand two hundred and six (1206) respondents were randomly selected. They were interviewed via the structured questionnaire in Klang Valley in Malaysia to test their attitude towards go-green campaigns and green behaviour. Supermarkets such as Tesco, AEON, Big AEON, EcoSave and Giant were selected as locations to collect data because people from all walks of life go there to do their shopping. A 7-point Likert scale (1 presents strongly disagree and 7 presents strongly agree) was applied to determine the respondents' attitudinal measurement of attitude towards go-green campaigns and green behaviour. The questionnaire consisted of four sections.

The first section measured the knowledge and awareness of the respondents about go-green campaigns and green behaviour as it is argued by Hoch and Delghton (1989) and Park *et al.* (1994). In this part, respondents were asked some questions such as "Have you ever heard of go-green campaigns?" and "Are you aware of the green behaviour idea?"

The second section measured how much the respondents' attitude was affected by go-green campaigns and acquiring green behaviour by using a 7-point Likert scale with reference to Taylor and Todd (1995). To find out the respondents' attitude towards go-green campaigns and green behaviour questions such as "In my opinion if I follow a go-green campaign I can protect the environment" and "To me, using fewer

plastic bags is a step towards green” were asked.

As argued by Rezai *et al.* (2013), the intention of the behaviour can be measured by the dichotomous questions. The third section of the questionnaire measures the intention of respondents to perform green behaviour via go-green campaigns. In this part, the intention was tested through statements like “Do you find go-green campaigns influential in building your intention to perform green behaviour?” Finally, the last section of the questionnaire gathered information on socio-economic and demographic characteristics of the respondents such as gender, age, income level, educational background, marital status and residential area.

To achieve the study’s objective, a reliability test, chi-square analysis and binary logistic regression were employed. The reliability test of the Cronbach alpha was used to test the internal consistency among the statements in the questionnaire. Chi-square analysis was employed to test whether or not there was a significant difference between the selected socio-demographic variables and the respondents’ attitude towards go-green campaigns and green behaviour. The following hypotheses were subsequently formed:

*Hypothesis 1*

There is no significant difference between socio-demographic factors such as gender, age, marital status or educational level and the respondents’ attitude towards go-

green campaigns with regards to concern for the environment.

*Hypothesis 2*

There is no significant difference between socio-demographic factors such as gender, age, marital status or educational level and the respondents’ attitude towards green behaviour in reducing global warming and climate change through the effects of go-green campaigns.

*Hypothesis 3*

There is no significant difference between socio-demographic factors such as gender, age, marital status or educational level and the respondents’ attitude towards go-green campaigns where these programmes are perceived as being informative.

The binary logistic regression was applied to estimate the effects of the independent variables on the intention of respondents to perform green behaviour as a result of go-green campaigns. Table 1 illustrates the explanatory variables that were used in this model to gauge the respondents’ intention to perform green behaviour. The dichotomous dependent variable Y is the ‘respondents’ intention to perform green behaviour as a result of go-green campaigns’. The two categories of this variable are ‘respondents intention to perform green behaviour’, which is

coded as 1, and the second category is ‘respondents do not have the intention to perform green behaviour’, which is coded as 0. The present study selected the following variables as independent variables: gender, marital status, residential area, income level, education background, age, environmental concern, motivation and concern for society, importance of green behaviour and participation in go-green campaigns. The binary logistic regression model in particular is presented as:

$$\ln \frac{\pi}{1 - \pi} = \beta_0 + \beta_{1x} \text{Gender} + \beta_{2x} \text{Marital Status} + \beta_{3x} \text{Residential Area} + \beta_{4x} \text{Income} + \beta_{5x} \text{Educational Level} + \beta_{6x} \text{Age} + \beta_{7x} \text{Environmental concern} + \beta_{8x} \text{Importance of green behaviour} + \beta_{9x} \text{Motivation} + \beta_{10x} \text{Concern for the society} + \beta_{11x} \text{Participating in go-green campaign} + e$$

## RESULTS AND DISCUSSION

The Cronbach alpha value was determined to gauge the reliability of the study. This value was 0.946, which shows consistency among all the questions in the questionnaire; therefore, the model is fit for the study.

### *Descriptive Statistics Analysis*

The socio-economic demographic of respondents are presented in Table 2. Out of 1206 respondents, 67.3% of the respondents

were female, 70.2% were residents of urban areas and 71.6% were married. Just over half of the respondents were educated at tertiary level (68.7%). With regards to age, 13.5% were below 25 years, with the majority being between 26-45 years of age (65.4%) while around 21.1% were over 46 years of age.

### *Respondents' Attitude Towards Go-Green Campaigns and Green Behaviour*

Table 3 shows the respondents' attitude towards go-green campaigns as well as green behaviour that is influenced via these campaigns. The results show that most of the respondents displayed a positive attitude towards go-green campaigns and green behaviour. Sixty-six percent of the respondents stated that by participating in go-green campaigns they could protect the environment, and 62.1% of the respondents believed that go-green campaigns informed them that green behaviour could reduce global warming and climate change. Moreover, 79.2% of the respondents believed that reducing the usage of plastic bags was a step towards becoming green. A positive attitude towards this campaign can be observed among respondents by analysing the responses. In this regard, 75.2% of the respondents supported the statement that go-green campaigns informed them of how they could perform green behaviour.

### *Chi-Square Analysis*

Go-green campaigns can affect people of various socio-economic characteristics in



different ways. Therefore, it is interesting to find the association between the demographic profile of the respondents including gender, marital status, educational level and age with their attitude towards go-green campaigns and green behaviour. Table 4 explains the results of the chi-square test between the socio-demographic characteristics of the respondents and their attitude towards the go-green campaigns with regards to concern for the environment.

The results show that only marital status had an insignificant association with the attitude towards go-green campaigns and concern for the environment. Respondents who were female ( $\chi^2= 7.96, p<0.01$ ) displayed a greater positive attitude towards these types of campaigns to preserve the environment. Furthermore, respondents who were educated at tertiary levels showed a more positive attitude towards this concept ( $\chi^2=19.11, p<0.01$ ). In terms of age, the

TABLE 1  
Explanatory Variables Measuring Respondents' Intention to Perform Green Behaviour via Go-Green Campaigns

Variables	Design value (coding system)
Gender	0=Male 1=Female
Residential Area	0=Suburban 1=Urban
Marital Status	0=Single 1=Married
Income	0=Below RM 3000 1=Above RM 3001
Age	0=Below 35 1=Above36
Educational Level	0=Primary& Secondary 1=Tertiary
Participation in go-green campaign	0=Not participated 1=Participated
Environmental concerns	0=I am not concerned about the environment 1=I am concerned about the environment
Importance of green behaviour	0=Green behaviour is not important to protect the environment 1=Green behaviour is important to protect the environment
Motivation	0=I am not motivated to perform green behaviour via go-green campaign 1=I am motivated to perform green behaviour via go-green campaign
Concern for society	0=Not being concerned for society 1= I am concerned for society

TABLE 2  
Demographic Profile of Respondents (n=1206)

Characteristics	Percentage	Characteristics	Percentage
Gender		Educational level	
Female	67.3	Primary	9.1
Male	32.7	Secondary	22.1
Residential area		Tertiary	68.7
Urban	70.2	Income level	
Suburban	29.8	<2000	14.8
Marital status		2001-3000	26.8
Single	28.4	3001-4000	36.6
Married	71.6	4001-5000	12.6
Age		>5001	9.3
<25 yrs	13.5		
26-35	31		
36-45	34.4		
46-55	14.3		
>56yrs	6.8		

TABLE 3  
Respondents' Attitude Towards Go-Green Campaigns and Green Behaviour

Statement	Likert scale scores (percentage)							Mean
	1*	2*	3*	4*	5*	6*	7*	
1. I believe that if I follow go-green campaigns I can protect the environment.	0.8	1	2.4	6.1	23.7	38.9	27	5.69
2. Go-green campaigns tell me my green behaviour can reduce global warming and climate change.	1	1.2	3.5	9.5	22.9	32.1	30	5.68
3. To me, using fewer plastic bags is a step towards going green.	0.7	1.2	2.7	5.9	10.4	33.1	46	6.08
4. Go-green campaigns inform me of how I can perform green behaviour.	0.6	1.2	3.2	6.1	13.6	30.3	45	5.87

TABLE 4  
Chi-square Value and Respondents' Attitude Towards Go-Green Campaigns and Concern for the Environment

Socio-demographic variables	$\chi^2$
Gender	7.968***
Age	57.311***
Marital status	0.84
Educational level	19.117***

\*\*\* Significant at 1% level



respondents who were younger than 35 years had a more positive attitude that go-green campaigns could protect the environment ( $\chi^2=57.311, p<0.01$ ).

The result of chi-square in testing the association between the respondents' demographic profile and their attitude towards green behaviour to reduce global warming and climate change through the effects of go-green campaigns are presented in Table 5. The results show that respondents who were female ( $\chi^2= 95.158, p<0.01$ ) and married ( $\chi^2= 54.313, p<0.01$ ) displayed a more positive attitude towards green behaviour and believed that this behaviour could reduce global warming and positively affect climate change.

Similarly, Table 6 summarises the results of the association between demographic profiles of the respondents and their attitude towards go-green campaigns and perception of these programmes as being informative. The results show that respondents who were below 35 years old had a positive attitude and perceived these campaigns as being informative ( $\chi^2= 38.587, p<0.01$ ). Furthermore, those who were married ( $\chi^2=2.833, p<0.1$ ) and educated at tertiary level ( $\chi^2=16.52, p<0.01$ ) displayed a more positive attitude towards go-green campaigns compared to persons who were single and less educated.

#### *Results of the Binary Logistic Regression*

The application of the binary logistic regression was used to find the extent to which the selected socio-economic characteristics and attitudinal factors

influenced respondents in having the intention to perform green behaviour. Table 7 shows the estimate logistic model for respondents' intention to perform green behaviour via go-green campaigns. Based on the results, the socio-economic characteristics of respondents such as gender, residential area, marital status, age, educational level and income influenced their intention. It also shows that go-green campaigns had a greater influence on women than on men by 1.57 times since the estimated coefficient for gender was positive and significant at 99% confidence level. The finding indicates that the estimated coefficient for the married respondents was positive and they had 1.65 times greater intention in performing this behaviour compared to singles.

Respondents who were residents of urban areas were more likely to go green by 1.68 times with a positive estimated coefficient at 95% confidence level. Furthermore, the results indicate that those who were older than 35 years were 0.52 times less likely to go green than other age groups. Income level and educational background can play an effective in adopting green behaviour as the respondents who had tertiary education and an income level of more than RM3001 a month displayed a stronger intention to go green. The likelihood of intention to behave in an environmentally-friendly way due to go-green campaigns was increased by 2.64 times in the case of educated persons (i.e. tertiary level); by 2.47 times in the case of persons with higher incomes (above RM3001 per month). The results also

TABLE 5  
Chi-square Value and Respondents' Attitude Towards Green Behaviour to Reduce Global Warming and Climate Change with the Effects of Go-Green Campaigns

Socio-demographic variable	$\chi^2$
Gender	95.158 <sup>****</sup>
Age	0.663
Marital status	54.313 <sup>****</sup>
Educational level	7.765 <sup>**</sup>

TABLE 6  
Chi-square Value and Respondents' Attitude Towards Go-Green Campaigns and Perceiving Go-Green Campaigns as Informative Programmes

Socio-demographic variable	$\chi^2$
Gender	1.521
Age	28.587 <sup>***</sup>
Marital status	2.833 <sup>*</sup>
Educational level	16.52 <sup>***</sup>

\*\*\* Significant at 1% level, significant at 10%

TABLE 7  
Estimated Logistic Model for Intention to Perform Green Behaviour via Go-Green Campaigns

Variables	Estimated coefficients	Standard errors	Significant level	Exp (B)
Gender	0.455	0.229	0.047 <sup>**</sup>	1.576
Marital Status	0.502	0.238	0.035 <sup>**</sup>	1.654
Residential area	0.523	0.243	0.000 <sup>***</sup>	1.688
Educational level	0.817	0.232	0.000 <sup>***</sup>	2.643
Income	0.905	0.229	0.000 <sup>***</sup>	2.472
Age	-0.645	0.235	0.006 <sup>***</sup>	0.525
Environmental concerns	-0.109	0.108	0.313	0.897
Importance of green behaviour	0.264	0.177	0.000 <sup>***</sup>	14.50
Motivation	-0.168	0.124	0.174	0.845
Concern for the society	2.507	0.172	0.000 <sup>***</sup>	12.27
Participating in go-green campaign	0.565	0.217	0.009 <sup>***</sup>	1.760
Constant	-1.435	0.347	0.000	0.238
-2 log likelihood	611.33	Nagelkerke R Square	0.77	
Cox and Snell R Square	0.571	Hosmer and Lemeshow Test	0.381	

\*\* significant at 1% level, \*significant at 5% level

indicate the important role society plays in the intention to go green (Table 7). Based on the results, the variable of concern for society was significant at 99%, and this variable was highly effective as the odds of the respondents having the intention to perform green behaviour due to concern for society was 12.27 times higher than for respondents who were not concerned. Furthermore, the variable of the importance of performing green behaviour plays a role on the intention of the person to perform green behaviour. The likelihood of having the intention to perform green behaviour via go-green campaigns for respondents whose attitude was that performing green behaviour was important for protecting the environment increased by 14.50 times more than for the other respondents. The results show that participating in go-green campaigns is effective in building green intentions. The positive estimated coefficient at 99% shows that respondents who participated in go-green campaigns had a higher intention by 1.76 times. In addition, the other two variables of motivation and environmental concerns were not effective as the related coefficients were not significant.

## DISCUSSION

In this study, the attitude of respondents towards go-green campaigns, green behaviour and the intention of behaving in an environmentally-friendly way as a result of go-green campaigns were tested. Similar to other studies, the present study concludes that there is a significant

difference between the socio-demographic profiles of the respondents including age and marital status (Thompson, 1998) and educational level (Magnusson *et al.*, 2001; Roitner-Schobesberger, 2008) with their intention of performing green behaviour. For instance, during this study, it was observed that respondents with higher education (i.e. tertiary level) were more concerned about the environment. This finding is supported by the literature, which asserts that educational level positively affects the attitude and intention of performing green behaviour (Onyango *et al.*, 2007; Tsakiridou *et al.*, 2008).

Furthermore, in the present study, it was observed that the attitude that green behaviour can reduce environmental degradation like climate change was observed to be greater among women compared to men. To support this finding, Banerjee and McKeage (1994) explain that women are more conscious of the environment and they are more likely to purchase eco-friendly products than men. Moreover, during this study, it was observed that respondents who were younger than 35 years old and held a higher educational degree (i.e. tertiary level) had the attitude that go-green campaigns were an informative source for them.

In addition to the above findings, this study contributes to the literature on the effects of socio-economic characteristics and attitudinal factors on intention to perform green behaviour due to go-green campaigns. Based on the results, it can be stated that respondents who were women, younger (below 35 years old) and more

highly educated (i.e. tertiary level) were more likely to have the intention to perform green behaviour via go-green campaigns. These results are consistent with the results of the study by Egea and Garc (2013), in which gender and education levels were proven to be effective on environmentally motivated consumption reduction but not age. Besides, the variable of concern for society was observed as being one of the main predictors of intention to behave in a green way via go-green campaigns. This finding corresponds with the findings of the study by Prestin and Pearce (2010), which showed the important role of society in influencing a person to perform green behaviour. Furthermore, the findings of the current study support the crucial role of the importance of the green behaviour variable. In fact, this variable plays an important role as one of the main predictors of intention in performing green behaviour. This finding is also supported by the findings of Laroche *et al.* (2001), which showed that consumers who are willing to pay more for green products are those who believe that awareness of present ecological problems and use of environmentally-friendly products are important.

Besides this, the findings of the present study contribute to the effectiveness of the role of participating in go-green campaigns. Therefore, it can be concluded that if the respondents are motivated to participate in go green campaigns and green activities, the likelihood of having the intention to perform green behaviour will increase among

them. In this regard, campaign organisers from both the governmental sectors and Non-Governmental Organisations can set up programmes such as exhibitions, trade shows and seminars or workshops to introduce the concept of green behaviour to the public. These programmes can present the adverse effects of environmental degradation like global warming, air pollution and water pollution on both the environment and human life. Moreover, possible actions that can be taken by humans to reduce environmental degradation can be taught. Through these programmes, the general public can be motivated to perform green behaviour after being given more information on how they can behave in an environmentally-friendly way in order to protect the environment.

## CONCLUSION

There is no doubt that changing one's behaviour is a time-consuming endeavour. Go-green campaigns are just a beginning for people who aim to change their behaviour. An effort should be made to expand the influence and accessibility of such environmental protection programmes.

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