

Environmental perceptions to define a typology of environmental delinquency in the management of MSW

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Received: December 15, 2017.

Accepted: March 20, 2018.

Abstract

In this paper, we present the prototype of the citizen who handles in an inefficient and neglected way the municipal urban wastes generated at home; behavior that corresponds precisely to the Stage Quo scenario that prevails in the Municipality of Acapulco de Juarez. The aim was to gather information for structuring the design of a typology that would come to describe the typical characteristics of the citizen of the city and port of Acapulco, based on his/her behavior upon municipal solid waste management. We administered a survey to a group of parents with children to learn about their environmental and sustainable attitudes and behaviors. The results we obtained showed incompatibility between what respondents said their attitudes and behaviors were like and the reality that anyone can observe when touring the city, regarding the inadequate disposal of municipal solid wastes, which translates into the proliferation of open dumps, saturation of temporary containers, scrap vehicles and household goods abandoned in public streets and sites. The classification of environmental delinquents, by factors of influence: ignorance, negligence or apathy, arises as a result of this incompatibility. In order to reduce this environmental delinquency, implementing environmental education action plans and programs for sustainability in its non-formal and informal modalities for the rehabilitation of the population becomes an urgent need.

Keywords: Climate change, greenhouse gases, sustainable development, environmental delinquents, co-responsible and sustainable citizens.

INTRODUCTION

In 2007, Ban Ki-moon, the Secretary-General of the United Nations at that time, admonished the participants of an event – entitled “The Future in our Hands: Addressing the Leadership Challenge of Climate Change” –, that they held the future in their hands, and that together, they had to ensure that their grandchildren would not have to ask them why they had failed to do the right thing, and had let them suffer the consequences.

In accordance with the Fourth Assessment Report (AR4) of the United Nations Intergovernmental Panel on Climate Change (IPCC), waste and its management were identified as one of the seven main contributors to anthropogenic climate change (CC) (IPCC, 2007).

Mexico's economic growth, as stated in the 2013-2018 National Development Plan, remains closely linked to the emission of greenhouse compounds, to the excessive generation of solid wastes, atmospheric pollutants, untreated wastewaters, and to the loss of forests and jungles.

In the 2016-2021 State Development Plan (SDP), it is underlined that Guerrero's biodiversity, the fourth greatest biodiversity in the country, is in real danger of getting diminished due to the many processes of environmental deterioration that are taking place in its territory. It is also pointed out that the state's inadequate municipal solid waste management (MSWM), together with the lack of sites for their final disposal in accordance with national regulations, cause pollution problems in soils and water bodies.

When referring to the homes of Guerrero, they specify that 36.2% of the households bury or burn their waste. About the economic activities and the population settlements, they refer that these settlements were established and have grown in an anarchic and disorganized way, without a territorial planning that would take into account the characteristics and the carrying capacity of the ecosystems; and they determine that Guerrero's society, in general, has an incipient environmental culture, and that there are not enough awareness programs and neither enough environmental education.

With a population of 810,669 inhabitants, the municipality of Acapulco de Juárez is the biggest one in the Guerrero (INEGI, for its name in Spanish, 2015). The 2015-2018 Municipal Development Plan (MDP), according to a study carried out in 2012 by the Federal Ministry of Social Development (SEDESOL, for its name in Spanish), on the demographic growth of the metropolitan area of Acapulco, reports that the urban sprawl has spread 9.4 times in the last thirty years, changing the use of communal and high relief lands not suitable for human settlements, complicating the provision of public services, education, health, housing, roads, transportation, public security and extending high-risk areas; and that the main problem is the failure to comply with the regulations on environmental protection.

This MDP defines the need of acting with citizen co-responsibility as one of its transversal strategies in the field of sustainability; for the conservation and care of the environment; as well as other actions to mitigate the effects of CC that will enable us to adapt to the situation, by taking rational advantage of natural resources, in order to improve and foster the execution of actions for the protection, conservation and restoration of the environmental balance, are the longing targets that remain without being translated in facts.

Taking into account the data and summary statements contained in these three development plans, out of the many environmental problems –that are affecting the city and port of Acapulco, with a population of 674,479 inhabitants, the head of the municipality of the same name –, a very important issue, and critical aspect at the same time came up, identifying with minimal details but sufficiently clear, a picture of the inefficient and careless way waste is managed at home and the arbitrary disposal of what is commonly called “garbage”, everywhere, regardless of the site.

For King and Gutberlet (2013), recovering and disposing, the recyclable, that is, “resources”, from the municipal solid waste stream, besides being of local and global benefit, at community level is the way to join efforts and contribute in three axes that are concomitant with each other:

- 1) With the decrease of greenhouse gases (GHG).
- 2) The use of non-virgin resources (which one already processed, become by-products of recycling).
- 3) Energy saving.

When analyzing these three axes, we decided to carry out a research on what the people living in Acapulco did in that sense, what attitudes lead us to be part of the problem or what to be part of the

solution; how we behaved environmentally; and what we were willing to change in order to contribute to the construction of a sustainable society.

The aim was to gather information to structure the design of a typology that would describe the typical characteristics of the permanent resident of Acapulco, based on his/her behavior in terms of MSWM.

In the field of sustainability, citizen co-responsibility is demonstrated by acting accordingly for the conservation and care of the environment. Sustainable societies (SS):

- Know where MSWs are generated and who generates them; SS also know the impact and repercussions of its integrated management and the importance of doing it responsibly and efficiently right from their generating source.
- Understand that in order to mitigate the planet's health deterioration and to foster well-being, contributing to avoid unnecessary pollution of the environment is mandatory.
- Identify that the benefits of managing, classifying and separating MSWs are undoubtedly some ways for showing the value and respect the environment means to the citizens, as well as being of economic benefit to the family.
- Adopt a pro-environmental lifestyle, and the prevention, reduction and separation of MSW right from the generating source, to reduce the emission of GHG to tackle the anthropogenic CC, as habitual behaviors.

It helps to keep in mind that before the Industrial Revolution, humanity developed in favor of the environment, taking only what was strictly necessary; or as Rinaudo (2014) put it: to act together with the planet, and not against it, because of our greed for having a "little more" than we really should have, we have been unbalancing the holism of the planet and modifying its quiet and pious customs.

To rectify, it is necessary to know what needs to be changed for improving. In order to decide and go for the change, individuals need to know the typical characteristics of the permanent resident of Acapulco, based on environmental attitudes and behavior regarding the management of MSW, to determine if they are applicable to them or not and in what way and measure. Within this frame of reference, the individual will become his/her own direct beneficiary and those who live with him/her, the indirect beneficiaries, who will have the possibility of having a model that through actions will inspire them, to follow the steps.

METHODS AND MATERIAL AIDS

For this qualitative research, a survey was applied to an object population integrated in a non-probabilistic sample of 100 adult residents of Acapulco, with school-aged children.

The survey was applied from May 17 to June 30, 2017. Out of the 100 participants, 23 were men and 77 were women. Their ages were ranked between 24 and 64; which gave an age average of 39 years old. All said they were residents of Acapulco, and provided either the name of the colony or the zip code, where they lived. About their schooling, 4 said to have a Master degree; 25, a Bachelor degree, 49 said to have only attended high school, 12 junior high school, 4 elementary school and 6 said they were attending school at the time, but without specifying which grade.

The instrument used for this survey, a questionnaire, was administered to obtain the information that was needed to generate the typology of environmental delinquents that we propose in this work. The outcomes obtained were used to compare and establish their degree of compatibility with the scenario that can be observed when touring through the object locality: lack of cleanliness on avenues, streets, and public spaces. Because it is necessary for the population to accept full responsibility over all the

MSW and the different types of garbage that abound in Acapulco that have to be thrown by someone for they do not throw themselves, nor they suddenly appear in a corner or on a sidewalk.

To identify their typical characteristics, based on their attitudes and environmental behaviors regarding MSWM, this questionnaire of original design was structured in two parts with a battery of 11 and 15 items in the form of affirmations with positive directionality, Likert-scale type with 5 response options for each one.

Two variables were used to measure the data:

- 1) Type of attitudes before the environmental problems that prevail in the community.
- 2) Type of environmental behaviors and MSWM.

For the scoring of the variables, the documentary analysis method was used. A code was assigned to each response option. The statistical analysis was made by the distribution of frequencies.

RESULTS

The results obtained confirmed the lack of consistency between what is said and what is done. Incompatibility was found with what the respondents answered. When comparing their answers with the reality that prevails in the locality, regarding the inadequate disposition of MSW, it is easy to identify the source of the proliferation of open dumps (Juárez, 2009) in diverse points of the streets, avenues and public places; the saturation of temporary containers in colonies, beaches and public parks; the presence of junk vehicles and household goods (mattresses, stoves, refrigerators and electrical appliances of all kinds), abandoned on public roads.

The same happens in markets, parks, roundabouts, popular or residential neighborhoods, in vacant lots fenced or not, on beaches and their accesses, or in front of churches, schools or public or private institutions, to mention only a few public meeting points. All you need is to come to Acapulco, to confirm that this is the common scenario that, as a society, we maintain in Acapulco; except within the limits occupied by exclusive luxury residential developments.

The local population has sadly resigned to transit through open dumps on the sidewalk. Figure 1, is an example of this common scenario that can be seen almost at any point on a sidewalk throughout the city and port of Acapulco.



Figure 1. Open dump. Rafael Izaguirre Street Balcones de Costa Azul. Acapulco, Gro. June 30, 2017.

Photo by María Elena de la Lata López

The respondents' answers support the above detailed observations about the environmental problems that prevail in the community. To each one of the items contained in Part I, they responded as follows:

1. 46% strongly agreed or agreed with the statement that the deterioration of the environment is a political strategy invented by rich countries to continue exploiting poor countries. This percentage is very similar to those who disagreed or strongly disagreed that were 44%.
2. 56% fully agreed that the production and consumption of modern products is more important than the effects of the pollution caused by their manufacture. 44% disagreed or totally disagreed.
3. 58% of the respondents did not agree that with environmental education campaigns, the population would get more interested in participating in the protection and care of the environment.
4. 52% agreed or totally agreed that remaining indifferent to environmental problems, so as not to worry about matters that will be resolved with technological development, was a better option.
5. When asked if environmental activities were organized in their community, 40% of them said they would agree or totally agree to willingly collaborate, while 51% said they would not.
6. 46% considered that the increasing environmental pollution is harmful to health; against 53% who disagreed or strongly disagreed.
7. 54% thought that it was useless to try to sensitize people so that they could change their consumption habits; although 44% said it was not useless.
8. Among the respondents, 33 of them said they agreed or totally agreed when told that the government authorities showed greater interest in finding solutions to mitigate the deterioration of the environment, and that this interest was reflected in effective actions of prevention, protection and care of the environment; while 47 of them, which didn't mean a majority, said they disagreed or strongly disagreed. 15 were indifferent and they did not agree or disagree.
9. 47 respondents said that they felt that the participation of the civilian population in environmental programs was not a growing one, nor that it reflected any more streets or more clean and garbage-free public places. But, 36 thought it was growing, and 13 were indifferent.
10. When asked if the city lifestyle was incompatible with the procurement of the environment, because urban development involves the use and consumption of huge amounts of natural resources and generates large amounts of pollutants, 55% said they disagreed or strongly disagreed. 39% said they agreed or totally agreed.
11. 48 of the respondents agreed and attributed the existence of the environmental problems that affected the community, to the lack of purpose and interest of the government authorities in these matters. While 42 disagreed, and 10 were indifferent.

The following outcomes are one for each one of the items in Part II of the questionnaire. They refer to the types of behavior and MSWM.

1. Out of the 100 respondents, 77 said that they almost always or always took full advantage of natural light, to save electric power consumption. 21 said they never did.
2. 51 said they sometimes avoided buying food with chemicals or preservatives. 16 said they almost never did, and 6 said they never did. Only 19 said that they almost always avoided this kind of food, and 6 said they always avoided it.
3. 63% said they always turned off the sink faucet while brushing their teeth or soaping their hands and 24% that they almost always did. 13% accepted doing it only sometimes.
4. To minimize domestic water consumption –and there was water in the water tank– 36 always or almost always used a bucket to take a bath, instead of using the shower. 32 said they never did it, 7 that almost never, and only 25 that they sometimes did.

5. Only 18 said they always and almost always kept themselves informed on the environmental problems and the measures at an individual level they could take to mitigate environmental deterioration; 44 that sometimes, 3 that almost never, and 4 said they never did.
6. 42 said they always or almost always, preferably bought or consumed natural foods and beverages. 44 that sometimes, 3 that almost never and 4 never did.
7. 49% said they always made sure that there were no lights left on, except when it was absolutely needed and 26 said they almost always did; 16 sometimes and 9 said they almost never or never did.
8. When doing the washing or laundry, 35 said they always or almost always used the minimum amount of detergent that was needed to, 24 that sometimes, 21 that almost never and also 21 said they never did.
9. 63 said they never or sometimes felt enthusiastic to participate in environmental activities. 23 that they always or almost always did; 1 respondent did not answer.
10. From almost always to always, 37 respondents said they separated organic waste from inorganic waste. 1 did not answer, and 64 said they did it, from sometimes to never.
11. Out of the respondents, 84 said that the garbage they generated at home, they did not throw it on the street that they kept it in the wastebasket and that from there, it was delivered to the garbage collection truck. Only one said that they never did that, and 6 said they sometimes did.
12. Almost always or always, 46 of the respondents said they practiced the three "Rs" (reduce, recycle and reuse) to save natural resources and reduce purchases and consumption of unnecessary products, recycle waste and reuse containers to use as containers or other applications. 55 said they sometimes or never did it.
13. 62 never made compost, not even to make the most of the organic waste (that is, of the food), to use it to fertilize the house plants. 6 almost never made compost, 18 made it sometimes; and only 7 always made it and also 7 almost always did.
14. As drivers of a motor vehicle, motorcycle or bicycle or as a pedestrian, 54 said they always respected the traffic rules to avoid obstacles or interferences in the road or traffic and not to cause traffic jams or accidents that altered and complicated traffic circulation what caused greater pollution due to unnecessary or excessive fuel consumption. 28 said that they almost always did. 12 said that they sometimes behaved like this, and 6 said they never did.
15. To avoid unnecessary air pollution, as owners of a motor vehicle or motorcycle, 79 said that we should always give them engine tuning maintenance. 13 said we almost always had to, and 7 said that never.

As a result of the incompatibility already mentioned, the concept of "environmental delinquency" was conceived taking into account ignorance, negligence or apathy, as influencing factors.

ENVIRONMENTAL DELINQUENCY

For the purposes of this research, environmental delinquency is considered to be the act of perpetrating felonies against the environment, by violating the laws of Nature. It was decided to use this term to signify the impotence of belonging to the protagonist cast that unmercifully alters and modifies the natural system, in order to satisfy his/her own needs; without repairing the damage that his/her indifference and irresponsibility is causing to the planet.

To facilitate the approaching to the likely candidates to participate in the survey, referring to a classification that displeases, as it was expected, got the attention of those who heard it, and whether it was out of concern or curiosity, they agreed to answer the questionnaire.

While the sanitation, collection, transfer, treatment and final disposal of waste is one of the functions and public services that are under the responsibility of the municipality (Constitutional Art. 115, Fraction III, paragraph c), the cycle of its management starts right from the generation of the waste itself, hence the co-responsibility of the parties, which is not only a matter of culture or of an economic level, is of vital importance since the indiscriminate and inefficient MSWM, because of the anthropogenic adverse action of human beings, at global level, strongly affects the quality of life and health of the planet and that of every living being.

In order to delimit the field of action of the concept of environmental delinquency, that we proposed in this research, we agree with Foladori (2001) when he affirms that, despite the lack of agreement on the seriousness of the problems or on the procedures to face such situations, the analyzes and proposals must encompass the environmental crisis under three major themes: overpopulation, resources and waste.

Foladori himself determines the external physical limits with which human society encounters: the limit of the human support capacity of the ecosystem Earth; and an obvious reality is threatening us: we are polluting the environment at such a speed that Nature cannot "recycle" what we discard; that is, that we are facing the limit of natural recycling of the ecosystem Earth. If we have that the environmental problems of the human society arise as a result of its economic and social organization, then the human being/nature relationship is indissoluble, because the actions of the first inevitably have an impact on the second.

The third aspect of the problem, that one of the wastes, is an essential part of the subject that gives course to this research. Therefore, it is necessary to define the typology of those responsible of the MSW right from the source where they are generated and from those who generate them: Acapulco's inhabitants.

ENVIRONMENTAL DELINQUENT'S TYPOLOGY

Ignorance, apathy and negligence are factors of negative and decisive influence that make impossible for the members of a society, as a whole, to take preventive and remedial measures, in order to rectify their behavior, and thus, to avoid causing further disruptions the natural order with their thoughtless anthropogenic actions or at least, to allow them to make the decision of minimizing them.

The typology of environmental delinquent that we present in this paper is unprecedented. Its structure is a product of the reality that is reflected in practically all the streets, avenues and public places of the city and port of Acapulco.

The environmental delinquents (Table 1) who reside in Acapulco know they are, but are indifferent and pay no attention; others may partially know, but are apathetic; and there are those who definitely do not know the following:

- The mechanism through which the organic solid waste decomposition generates GHG and how the emission of these gases can be mitigated.
- What GHGs are, or where they are, or what they are for.
- That, the greater the amount of food in the garbage, the faster biogas is generated (Bitrán, 2006).
- That the composition of organic solid waste is one of the determinants of the potential generation of biogas.
- When it is too hot during the day or when it refreshes a lot at night, since they say they do not feel the changes; they comment that the Port suffers the ravages of natural phenomena such

as hurricanes and red tides that did not happen before; but they do not know that these are symptoms of CC, nor that they can be mitigated, let alone how it can be done.

- Neither do they understand what co-responsibility means; for them, everything is the government's fault, the authorities' and of the existing corruption and impunity.
- And they ignore that the wastes and their management are one of the seven main contributors to CC.

In general, they only know or say that:

- In other countries, like in the United States of North America, culture plays a main role on people and there is no trash on the streets because the law is thoroughly respected and applied, and if they do not go by the rules, they are fined or can even end up in the jail. (Vox populi).
- They think that, by burying, burning or throwing all the garbage on the truck, it will disappear from their lives as if by magic.

This typology corresponded to the Status Quo scenario of the Municipality of Acapulco de Juárez' MSWM, which was supported by Salmerón et al. (2017), when calculating greenhouse gas emissions in urban solid waste landfills in terms of the carbon footprint (HdC) (20). For this purpose, they used the MRS-GEI tool for the calculation of GHG emissions in MSWM, developed in 2009, in Germany.

Salmerón et al., (2017) rated the Municipality of Acapulco de Juárez as the largest generator of MSW in the State of Guerrero, due to the number of inhabitants and the economic activity of the place; and also, on the Status Quo scenario of the current situation that reflects the MSWM in the whole Municipality. They pointed out that only 6% of the generated waste (19,728 ton/year) is recycled; and this is made possible thanks to the intervention of the informal sector; 94% are deposited under poor practices; and the materials that are recycled in greater percentage are: paper and cardboard (45%), plastics (31%), ferrous metals (12%), textiles (5%), glass (3%) and aluminum (3%).

Table 1. Typology of the environmental delinquent of Acapulco. (Own elaboration).

Type of delinquent by influence factor	Typical characteristics	Behaviors they present
By ignorance	Lack of knowledge and/or experience.	As they are unaware of their condition as predators, they act with absolute lightness and freedom; without any conscience remorse. They go around the world, leaving their garbage in the dust, anywhere and those who are uncomfortable and not knowing what else to do, burn it (thinking that it disappears) and thus they are convinced that they release the world of their "garbage".
Due to negligence	Neglect, lack of care or application.	They know about the topic, they can even be experts in environmental sciences but they think there is no way to fix the world and they remain inactive, justifying their lack of action due to the complexity of the problem they know because they have studied it. Occasionally, they feel some remorse and as they know it is not good to go through life throwing their MSWs (often called trash) everywhere, they think or say that they are going to do something about it, and perhaps they might take some measures at home, like separating their waste, but only during some days, or reduce the waste of paper; but later on, they repress and ignore the calls of their conscience and go back to behaving carelessly.
Out of	Lack of	They do not worry at all. Whether they know a lot or little about the

apathy	willingness or enthusiasm.	generation of MSWs and the impact on the environment, they do not care, or think about this. They do not give a penny to what garbage and its final disposition causes or stops causing. They can barely manage their lives, and they cannot think of other problems that are neither exclusive nor easy to be solved. If they ever think about it, they conclude that it is an issue for future generations, not of the current ones; because that's the way it was with their generation and nothing happened so far and life goes on.
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The conversion task is of such magnitude that it seems impossible. However, environmental citizens who are co-responsible and sustainable by choice are the prototype of the inhabitant to be trained in the framework of sustainable development, to which we should aspire as rational beings. Due to the complexity involved in a change of direction of this magnitude, for the municipality, as the co-responsible counterpart, to exercise its formal leadership, and to promote and support the sum of efforts, is crucial.

The municipality also has to accept that the exercise of governmental power is limited and it can get even more limited without the participation of those who outnumber it. Municipal authorities, no matter how capable and willing they are, will never have a way to deal with the dissatisfaction reactions that nature shows because of the pain and damage caused by anthropogenic GHG emission, let alone tackle these reactions.

DISCUSSION

It is worth mentioning that we reviewed the literature and found that the issue of environmental delinquency is generally addressed through the existing legislation, in terms of the obligation and compliance of the law and its regulations.

We did not find any author that refers to this concept, upon the cultural perspective, with which it is presented in this work; but we did manage to locate an author, Moscoso (2016).

In his blog, Moscoso has published an article he wrote when << Thinking like an environmental delinquent >>, in which his imaginary character regrets having forgotten what he was taught as a child. And that it hurts to be an environmental delinquent, because for this type of people profiting on life is a priority. In his work, the author is describing himself, with all the defects that characterizes his indifference and selfishness, and ends proposing simple but significant actions to change his attitude and become a friend of the planet. We consider its publication of value, without any doubt at all, but it seems more like a piece of poetic prose that describes the characteristics of the environmental delinquent, invites to reflection but very much leaves to the reader's judgment, the relevance of changing behaviors not.

The relevance of starting working on this concept is that its improvement could come to constitute an alternative to address the dysfunctional sustainability of Mexicans, in terms of MSWs, in a rational way, but also affective.

Let's turn to the main conclusion of the Stern Report (2007); the one that emphasizes that the benefits of effective and early action to mitigate CC far outweigh the costs of inaction or deferral.

It is precisely the reason why we find enough arguments to raise the urgency of choosing sustainable development options adjusted to the limits that the terrestrial atmosphere imposes on economic, social and environmental sustainability.

A change in the society's consumption patterns and a reduction of the amount of solid waste that is currently being generated would contribute significantly to mitigate the loads of MSW. In general, the benefits of conserving virgin resources and replacing them with recyclable materials tend to be greater than the energy production offsets of energy generation technologies (Morris, 2005).

On the one hand, recycling also conserves capacity and extends the useful life of existing landfills (Chester et al., 2008).

On the other hand, since we are still exposed to climate variability, extreme events and CC, in accordance with what the IPCC (2007) points out, and that our ability to adapt and that of ecosystems to adjust to these changes continues to require forcibly changes in practices, processes and structures in human systems, which we have failed to achieve at global level. However, in case of making these changes, from a local level, society will be in greater and better conditions to moderate the possible damages or even benefit from the opportunities that may arise. But, in addition to the above, we must keep in mind what Conde (2010) pointed out that in the future, it could be far more difficult to find free adaptation measures and that it was necessary to anticipate, in case there were, that these would have a cost, one which might be unattainable in some cases; and that another factor that we should consider was that barriers to the application of certain adaptation measures could be faced; warning us that it is very likely that in a scenario of water scarcity, for example, there will be clashes of interests between the agricultural, urban, industrial, livestock sectors, etc.

As it can be inferred from these approaches on vulnerability and adaptation, Conde's warnings remain in force; and also that mitigation is the one that sets the pattern and pace to follow, in order to be able to confront the attacks of CC with decisiveness, co-responsibility and efficiency.

Another issue about the promotion of environmental values: we should be promoting the correlation between the two main parties involved in the disposition and MSWM process, what necessarily implies knowing and accepting the sense of co-responsibility.

In order to do that, it is necessary to establish the difference between what responsibilities are those that fall on each one of the two parties: the population has responsibility in the phases of generation, separation and storage, that is, the responsibility of who generates the waste; and, the municipality, as the party in charge of the public sanitation service, or the agency in charge of providing the service.

Acapulco, as a population center and tourist destination of international fame, can and should take the lead. If Acapulco, the largest municipal seat of the State of Guerrero, or using an analogy, as the older brother, took the initiative to adopt the sustainable society model, it would be expected that the other population centers that integrate the municipalities of the state, such as younger brothers would follow the example.

CONCLUSIONS

Currently there is great certainty that climatic conditions will change in the coming years so it is important to act today before it is too late. Consequently, to substantially reduce GHG emissions in the quest to reduce climate risks throughout the 21st century, to broaden the prospects for effective adaptation, reduce costs and long-term mitigation challenges and contribute to the trajectories of sustainable development to be resilient to climate, it is a task of shared responsibility for all parties (IPCC, 2014). The society of Acapulco is not the exception.

Efforts and governmental agreements, global, national or local, however ambitious they may be, will remain insufficient as long as the owners of these MSWs are not convinced and not encouraged to participate in a decisive and efficient manner, before CC. Many adaptation and mitigation options can

contribute to anthropogenic CC, but none of them is enough by itself. For the implementation of the options to be effective, policies and cooperation are needed at all scales.

The pertinence and importance of striving to reduce the MSW generation to minimize the emission of anthropogenic GHGs, is not only to conserve virgin resources, save energy, and take advantage of non-virgin resources that become by-products when they recover, but are alternatives of procuring economic, health and environmental benefits for humanity and the Earth.

Facing the attacks of the anthropogenic CC with efficiency and co-responsibility deserves to be part of the population that through ignorance, negligence or apathy destroys and does not take care of the environment; which is what every responsible citizen does and who is committed to Nature and the only planet that he/she has for himself/herself and his/her family: The Earth.

To minimize pollution and environmental deterioration of the planet due to anthropogenic causes; to face with the greatest opportunity the threats, dangers and risks of the anthropogenic CC; to act in favor of sustainability, and to live without a remorse before future generations can seem to the skeptics an outrage.

However, we believe that it is worth trying; especially if one can count on the participation of Acapulco families, acting from the first source of garbage: home, the space where each of its residents, regardless of age, socio-economic, political, cultural, religious creed, occupation or academic training, should be known direct or indirect active participants of the problem.

Direct, if factors such as who is in charge of the economic power or who has the choice and purchase decision for the family consumption, are taken into account; or the indirect ones that come to be the minors as economic dependents under the authority of their parents or guardians, but who also generate wastes.

To overcome inaction environmental awareness becomes ethically and strategically essential; at an individual level, yes, but in the sphere of the social collective, because this cause can not be undertaken if the protagonists do not behave consistently with what wants to be achieved: to reduce environmental delinquency until its disappearance, and to replace this destructive model with that of a co-responsible citizenship by choice, of the protection, care and conservation of our health and that of the planet.

The challenge is to combat environmental delinquency until it becomes co-responsible and sustainable citizenship by choice, the concept that we have defined as its antithesis.

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TRADUCCIÓN DEL ARTÍCULO, VOL. 4 NÚM. 1, 2018

Citation of this article is possible on the following ways:

APA sixth edition style

De la Llata López, M. E., Juárez López, A. L. & Sampedro Rosas, M.L. (enero-junio de 2018). Percepciones ambientales para definir una tipología de delincuencia ambiental en el manejo de RSU. *Revista UPIICSA Investigación Interdisciplinar*, 4(1), 1-14.

Chicago 15th edition style

De-la-Llata-López, María Elena, Juárez-López, Ana Laura & Sampedro-Rosas, María Laura. Percepciones ambientales para definir una tipología de delincuencia ambiental en el manejo de RSU. *Revista UPIICSA Investigación Interdisciplinar*, 4 No. 1 (enero-junio de 2018): 1-14.

Harvard Anglia style

De la Llata López, M. E., Juárez López, A. L. & Sampedro Rosas, M.L., 2018. Percepciones ambientales para definir una tipología de delincuencia ambiental en el manejo de RSU. *Revista UPIICSA Investigación Interdisciplinar*, enero-junio, 4(1), pp. 1-14.

IEEE style

[1] M.E. De-la-Llata-López, A.L. Juárez-López y M.L. Sampedro-Rosas. Percepciones ambientales para definir una tipología de delincuencia ambiental en el manejo de RSU. *Revista UPIICSA Investigación Interdisciplinar*, vol. 4 No. 1, pp. 1-14, enero-junio de 2018.

TRADUCCIÓN DEL ARTÍCULO, VOL. 4 No. 1